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ABSTRACT

Presented in 13 short sections, this bibliographic instruction manual is intended to help both students and non-students to: (1) locate specific information sources and make use of existing information systems--e.g., libraries--to carry out research; and (2) become oriented in the research process by following organized search strategies. Section I addresses the self-reliant learner, and advocates digging for information, being open to what is found, and managing it wisely as a means to control one's life and assist in achieving life goals. Section II defines information and discusses its sources and applications. Section III describes plagiarism and copyright laws, suggesting what needs to be cited. The outline of the research process in Section IV explains how to define research questions, gather information, and find leads, and features a flow chart illustrating the process. Helpful hints for finding information are provided in Sections V and VI, and Section VII offers six search strategy case studies. Sections VIII through XIII explore features of libraries and library resources (e.g., interlibrary loan, microcomputers, cataloging, the reference department, and government documents). Five appendixes include a review of the mechanics of footnotes; a bibliography of research guides; a glossary of terms; explanations of library classification systems; and a condensed version of Bloom's Taxonomy of Cognitive Objectives. Keyword and subject indexes are also provided. (SD)

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SURVIVAL SKILLS FOR THE INFORMATION AGE

A handbook of research skills —
both in and out of the library,
for use in college — and long afterward

Community College of Vermont
Waterbury, Vermont

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The revised edition was prepared by Eileen Chalfoun, Eric Sakai, Meg Kluge, Mica DiAngelis and Dianne Maccario.

The preparation of this library manual was part of a much larger effort to help students at the Vermont State Colleges make more and better use of a wide range of research resources. The CCV Resources Task Force would especially like to thank Dr. Dennis Lindberg, chair of the Vermont State Colleges Library Task Force, for his encouragement and patient support of this project. President Kenneth G. Kalb of Community College of Vermont has also provided consistent support for the library manual project, which we gratefully acknowledge.

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INTRODUCTION

This is a bibliographic instruction manual. You will find it helpful immediately in your work as a student. Since the need to problem-solve does not disappear at the end of a semester, you will also find this manual helpful when you are no longer a student. Your research skills will serve you well in your career, in your civic life, in your leisure time activities. Keep this manual and refer to it for guidance whenever you have a need to seek information through research.

This manual can do two important things for you:

1) It can help you locate specific sources of information and make use of information systems, such as libraries, that are available to help you carry out research.

2) It is also designed to help you orient yourself to the process of research. It can help you become more independent as a researcher by helping you follow organized strategies for research.

There are several ways to find specific information in this manual. The Table of Contents gives a broad overview and the Index makes it possible to find information in detail using keywords and phrases. Appendixes A through E complement the text. They contain information that does not appear in the main text.

You will find some technical language in this manual — some words and concepts that may be unfamiliar. Wherever possible, these have been explained in the text itself. There is also a Glossary (Appendix C) for further reference. One important thing you will learn as you use this manual is the specialized vocabulary of research.

You will find many suggestions for action, some of which may be new to you. Test them out. Adapt them to your needs. Sharpen your detective skills and create your own special strategies for finding the information you need — for college projects, for your work, for pursuing your personal interests.

Research is a challenging and creative activity. It is also a learning and growth experience which should be enjoyed. Good luck, and have fun!

I

THE SELF-RELIANT LEARNER

The amount of time we spend in school or formal training programs is small in proportion to our life span. Most of our learning has to be self-directed, and takes place in a real-world setting. In our society, college graduates are expected, and sometimes told, to be independent learners. The level of career and personal success we achieve depends to a large extent on how well we learn to identify, gather, and use information.

The way to satisfy our needs for new information and greater knowledge is to be more than passive bystanders in life. We must take responsibility for our own lives by being willing to dig for information, open to what we find, and capable of managing it wisely. The sooner we learn how to do this, the better. It puts us in control of our lives, affords us protection, and opens the way to achievement of our goals — in college, in our careers, and in our personal lives.

Throughout our lives we are presented with opportunities for development often in the form of problems to be solved. We are constantly making choices on how and when to move forward, and experiencing many different emotions as we engage in decision making and implementation of our plans. We are gathering and storing information and hoping to know a lot more at the end than we did at the beginning. And we are in a more powerful position because we can make use of that information.

For many reasons we take steps to get answers to our questions, form opinions, reach solutions, and act. We are motivated to take advantage of the infinite variety of learning activities our world offers us: formal and informal, paid and free, individual and group activities. We may differ by degree. In essence, however, we have to be, want to be, and are all life-long learners and doers.

Sometimes we get stuck because we depend too much on what we have learned from our own experiences. We need to remain open to, and share in, the accumulated knowledge of the world — the observations, experiments, experiences, ideas and reasoning of other people past and present. The information from that body of universal knowledge greatly increases our ability to problem-solve.

One of the most important skills you can gain from college is the ability to locate and use information from a variety of sources. The purpose of this manual is to help you get started with the process of research — locating, gathering, and using information from libraries and other sources.

II

Information is not a concrete object like an apple that you can hold in your hand. It is an abstract reality that exists in the mind. Sometimes people get confused about the nature of information because this information from the mind is saved and transferred in "things" (materials and software such as books, newspapers, cassettes, diskettes, etc.), and because our society spends so much energy producing and selling these objects. We have to remember that what is actually inside these objects, and what comes out of these operations, is what counts. It is the "content" or messages they carry that have an effect on our lives.

INFORMATION AND KNOWLEDGE

There are many synonyms for the word information. The one most commonly used is knowledge. It is the closest in meaning because information is basically about knowing, and about using knowledge as a tool for action. Lack of knowledge prevents us from making informed decisions and following up with appropriate actions. Possession of knowledge frees us to go forward.

In any society knowledge is power. Don't be fooled by the inaction of someone who is knowledgeable. Sometimes the outcome of research is a decision that the best thing to do is not to take the action you had considered. Or perhaps it would be better to do it tomorrow or next week or next year, instead of today. For example, if you are playing the stock market, your research may tell you that the stock you own is undervalued. Therefore, the best thing to do may simply be to hold onto it, with the confidence that the price will probably rise.

WRONG INFORMATION

Insufficient or wrong information can be as harmful as no information at all. Suppose your history instructor tests you on the exact date of the Battle of Hastings. If it was not in the textbook, or it was only mentioned as an eleventh century event, or a typographical error leads you to believe it occurred in 1606, you will give the wrong answer on the quiz. The only correct answer is 1066. To be sure of answering that question correctly, you must locate that information, confirm that it is accurate, and use it at the appropriate time and place.

CHANGING INFORMATION

The history question dealt with an event that occurred in the past. It was a question of fact, and the answer will never change, unless new evidence is discovered that proves the old "fact" to have been incorrect. A science question, on the other hand, might involve a theory or an hypothesis. This proposed explanation of how nature works is usually expressed in a formula. Its correctness has to be proved by controlled experiments, or other methods, before it can be considered a fact. Although this "answer" can change to a non-answer overnight, the name of the scientist who proposed it and the date it was proposed will remain as constant facts.

Theories can be proposed and proved or disproved in any area of life. In fact, you probably do so every day without realizing it. When you try out a new short-cut, only to discover that the trip actually takes longer that way, you have tested and rejected the hypothesis that the new route is quicker. If your car won't start, you may hypothesize that the problem is with the battery. You test this theory by recharging the battery. The car starts as it should,

which proves your hypothesis (as well as fixing your car). Such hypothesizing and testing provide us with good information for managing our lives.

NON-FACTUAL INFORMATION

Opinions, attitudes, values, and feelings also serve us as information. Knowing the friend you invited to dinner prefers chicken over fish, you will not bother to look at the seafood when you shop for groceries. Should your friend's preference reverse next year, it will affect your shopping as a considerate host. If you are impressed enough by your friend's enthusiasm and health, you may decide to change your own diet.

INFORMATION SOURCES

It is what people know, think they know, believe, feel, and choose that is formed into information materials and systems packages. As the source of knowledge, belief, feelings, and choices, people themselves are also information packages. And the offices, libraries, stores, clubs, and other places where you find the people and information products also constitute information sources.

PEOPLE ■ PLACES ■ THINGS

People, places, and things are the "big 3" of information. Check all these sources before you give up a search. Take a good look around you. Realize that the whole world is your information bank. Use it for all it is worth. Try out the suggestions for action in the following sections on Information Retrieval, Library Resources, and Search Strategies. As you gain more experience in research, you will discover additional ways to make the process work better for you.

The "information industry" is big business today. It will continue to expand rapidly, and will include electronic publishing and on-line publications. There have already been experiments with computer accessing of library collections directly from homes. In the future we will probably see methods of information transfer that we cannot even imagine right now. Always bear in mind, however, that there is nothing new about gathering, storing, and using large amounts of information. People have been creating information materials, and systems like libraries to handle them, for thousands of years.

INFORMATION: SYSTEM AND CONTENT

The larger and more complex the information source is, the more important it is to understand the system. Even if you don't know how to use the index and table of contents (the "system" of many kinds of books), you might be able to locate a piece of information you need in a reference book, although it might take you a rather long time to do it. When you're faced with a whole library, containing thousands or even millions of books, understanding the system becomes absolutely essential.

No matter what kind of an information source you are dealing with, it has two essential components:

1) THE SYSTEM
2) THE SUBJECT MATTER (INFORMATION)

For example, when you are working with the information stored in a computer, the system program controls the machine's operation, and the subject matter is the data that you enter in order to get the machine to do a piece of work, the text that you type into a word processing program, or the figures you feed into an accounting program. Similarly, when you use an information source such as a reference book, you must often master the "system" of the book in order to make full use of the information the book contains. For example, unless you start by using the index of an encyclopedia, you will probably miss many items related to the subject you are trying to look up. The reason is simple: the entries in the index have built-in cross references, so that you will still find information about your subject even if you look up a heading that is somewhat different from the one actually used to alphabetize the information in the body of the encyclopedia.

In the category of things, an "information source" may be composed of written/printed materials, of electronic media (computer software, for example), or any of a number of other means of storing information.

In the category of places, a library's system is the card catalog and the overall classification scheme that is used to keep track of materials in the library. The subject matter is the actual collection of books and other items in the library.

In the category of people, their system is the way they work, how they organize their materials, what approach they take to the subject. The information is whatever they have to tell you. People can turn out to be your most useful sources, although it may be hard to tell this in advance.

As you approach any information source, be sure to start by identifying the system and the subject matter contained in the source.

You must, of course, know what subject matter is contained in the source — does it contain the "stuff" you are looking for? But you must also figure out what system is used to organize the information. Otherwise, you probably won't be able to find the information you need.

RETRIEVING AND USING INFORMATION

Information use and information retrieval are integral components of one overall system known as information management. The skills you need for using information effectively are the same ones you need to be successful in locating and gathering information in the first place. We are in the habit of using our skills unconsciously. Undoubtedly you have been practicing many of these skills for years without realizing it. The key here is to become conscious of the nature of your skills. In that way, you can clearly understand how they will be most useful to you, and make intelligent choices about when to use them. You can also identify what skills you may need to acquire or to improve. You can then set up a plan and a schedule for mastering them.

THE TASKS OF RESEARCH

The overall skill of finding and using information is actually composed of many different skills, ranging from relatively simple, mechanical ones to much more complex and difficult ones. As you go about the business of becoming skilled in research, you will need to move from dealing only with the simpler skills (snooping out the facts) to the more sophisticated ones (evaluating information, drawing it together into systems, and drawing conclusions that go beyond the facts).

One useful system for classifying the various tasks you must master as you become skilled in research is called Bloom's "Taxonomy of Cognitive Objectives." This system is simply a list of verbs describing things you can do with your mind. Within the list, these actions are arranged in a sequence, from very simple, straightforward skills ("list, describe, trace") to much more complicated ones ("apply, evaluate, discuss"). As you approach a research task (whether for a college class or a real-life situation), take a look at the task in terms of Bloom's taxonomy. Ask yourself:

- How far do I need to go with this research task?
- Do I just need to collect some facts?
- Or do I have to collect the facts and then decide between conflicting theories?
- Or collect the facts and then create a theory to unify or explain them?

Bloom's list can help you define your task. (See Appendix E.)

RESEARCH SKILLS IN YOUR EDUCATION

The goal of education is the development of the self-reliant learner, the individual who has achieved the ability to gain knowledge independently. Skill in academic research is evidence of that ability because developing this skill requires:

- defining a problem
- collecting information about it
- discriminating between what is relevant and irrelevant, and
- structuring that knowledge into a solution — often a research paper or class presentation.

This process has application for you beyond the boundaries of your individual academic classes and the academic fields you study in college. This process is, in fact, preparation for independent, informed decision-making in many other contexts — your career, your civic life, your leisure-time activities.

Sometimes, the final step in your research process is to create a specific "product." For a college course, the product may be a research paper or a class presentation. In the business world, you may be called upon to carry out a research project and write a report for your boss. Or you might have to present your results to a group of your fellow employees at a meeting.

It is important that you know what sort of research product is expected in a given instance, but you should also know that in most instances the process of research and retrieval of information is by far the most difficult and important thing to master. The kind of product you are expected to produce will have some effect on the research process (if you know that footnotes and a bibliography are required, you will need to collect the necessary information along the way). However, most aspects of the research process are shaped by the kind of research question you are pursuing, not by the way you need to write up the results.

It would not be possible to provide detailed information on all the various kinds of research products in a manual like this. However, Appendix A contains general information on footnoting and bibliographies for common types of research products, including papers for college classes and reports and presentations in career settings. Your college courses provide you with an opportunity to prepare research papers and presentations with a good deal of guidance from your instructors and your fellow students. Once you have mastered this kind of research product, you will be able to make the leap to producing business reports, memoranda, and presentations. Appendix B contains a bibliography of other works related to doing research and writing up the results.

III

PART FAIR: PLAGIARISM AND COPYRIGHT

When you perform research you are almost always making use of information that someone else has collected or produced. This is true of all "secondary research," where you are consulting information sources such as books and periodicals. Even in the case of "primary research" — interviewing, surveying, laboratory experiments — you will almost always make use of background information from secondary sources as well. The two most important areas of concern when using information are copyright and plagiarism. As a researcher, you should become knowledgeable about your rights and obligations. At all times do only that which is legal and ethical.

PLAGIARISM

Plagiarism occurs when the work of one person is used by another in a way that does not clearly reveal who was the true creator or source.

The reader is led to believe erroneously that the user is the original creator or source. In all cases, plagiarism is a significant ethical issue; if you are a college student there may be more direct repercussions as well. Colleges and universities have strict policies concerning "academic honesty," which includes such actions as plagiarism and cheating on tests. If an instructor determines that you have plagiarized material in a research paper, you will probably receive a failing grade for the assignment, and you may be subject to stiffer penalties, such as expulsion from college.

You can avoid the danger of being accused of plagiarism by giving credit where credit is due. As you conduct research, you should always keep accurate notes on the sources of information you use. Then, when you prepare a formal paper or report from research results, provide "citations" (usually, footnotes and a bibliography) to acknowledge information you have taken from other sources.

WHAT NEEDS TO BE "CITED"?

If you repeat someone else's words exactly, you must acknowledge this by enclosing the material in quotation marks in a written presentation, and using quotation statements in an oral presentation. You should also acknowledge specific facts, figures, or original ideas or interpretations that you have taken from the works of others. Mention of names, titles, pages, etc., is expected with quotations, as well as for the use of the ideas of others.

The "how" of using direct quotations in a term paper or report is fairly simple: if the quotation is only one or two sentences in length, enclose it within quotation marks and incorporate it into the body of your text. If the quotation is longer, set it off from the text by indenting it at least five spaces on the right and left sides and leaving an extra space above and below. (Specifications vary in style manuals.) This is called a "block" quotation.

The "why" of using quotations is trickier. Even widely published scholars sometimes misuse quotations when they forget that long or frequent quotations tend to distract the reader from the flow of the writer's argument or narration. If you are making a point about the quoted author's writing style and need to provide an example, or if the author's wording is so crucial to your argument that the reader must see the words to understand your point, then you may have to quote an extended passage. Remember, however, that the reader is or should be mainly interested in what you have to say.

When your purpose is to convey information originally reported by some other author

or source, you may, with a clear conscience, paraphrase the information in your own words and provide a footnote or endnote for your source. This practice allows you to support your argument without the interruption of a block quotation. If you must use another writer's words, keep in mind that, in general, the fewer you use, the greater their impact will be.

COPYRIGHT

Copyright law guarantees that those who create works will have control over the use of their published or unpublished works for a specified period. The intent is to enable the creators to get a return on their investment in time, effort, and expense. The rights of the general public are also protected. You are entitled to a "reasonable" amount of non-profit use, without payments to creators, under the Fair Use doctrine.

As a student and researcher you can be guided by the "Single Copy" rule:

One copy by one person for one educational use.

Repeated, add-on, alternative, and profit-making uses are viewed as attempts to avoid seeking permission for free use or to avoid purchase. Such uses are not allowed under the one-copy fair use standards. For example, you may copy a chapter from a library book to take home for study, but you may not make two copies. You may not sell copies, and you may not build a library of copies for yourself, although you may make a collection of materials that you need for a specific research project.

In most cases, the use you make of information gathered for a research project will not violate the copyright law. Much of what you do in research is to collect ideas, facts, and figures, not large sections of actual works. And you are free under the copyright law to quote briefly from copyrighted works in your own work.

There are some situations where you may have to obtain permission to use copyrighted material. For example, if you are preparing a work that will be sold, or on which you will want to obtain a copyright yourself, you may need to get permission to use material from other copyrighted works. A standard reference for these matters is *The New Copyright Law: Questions Teachers & Librarians Ask*. This handbook was jointly produced by the American Library Association, the National Council of Teachers of English, and National Education Association. You can find it in most library reference departments.

Information about copyright questions can also be obtained directly from the Copyright Public Information Office of the Library of Congress in Washington, D.C. The number is: (202) 287-8700.

Appendix A contains information on the basics of giving credit for material you use in preparing research papers. You will find detailed rules for quoting, giving credit, and preparing notes and bibliographies in various research manuals. These are available in most libraries. The books by Kate L. Turabian and the Modern Language Association (MLA) and the American Psychological Association (APA) are examples of some standard guides usually found in the reference department. With the help of the staff and the card catalog, you can locate these and other materials to assist you in developing proper citations. See Appendix B for information about various guides and handbooks.

IV

GETTING STARTED IN YOUR SEARCH FOR INFORMATION

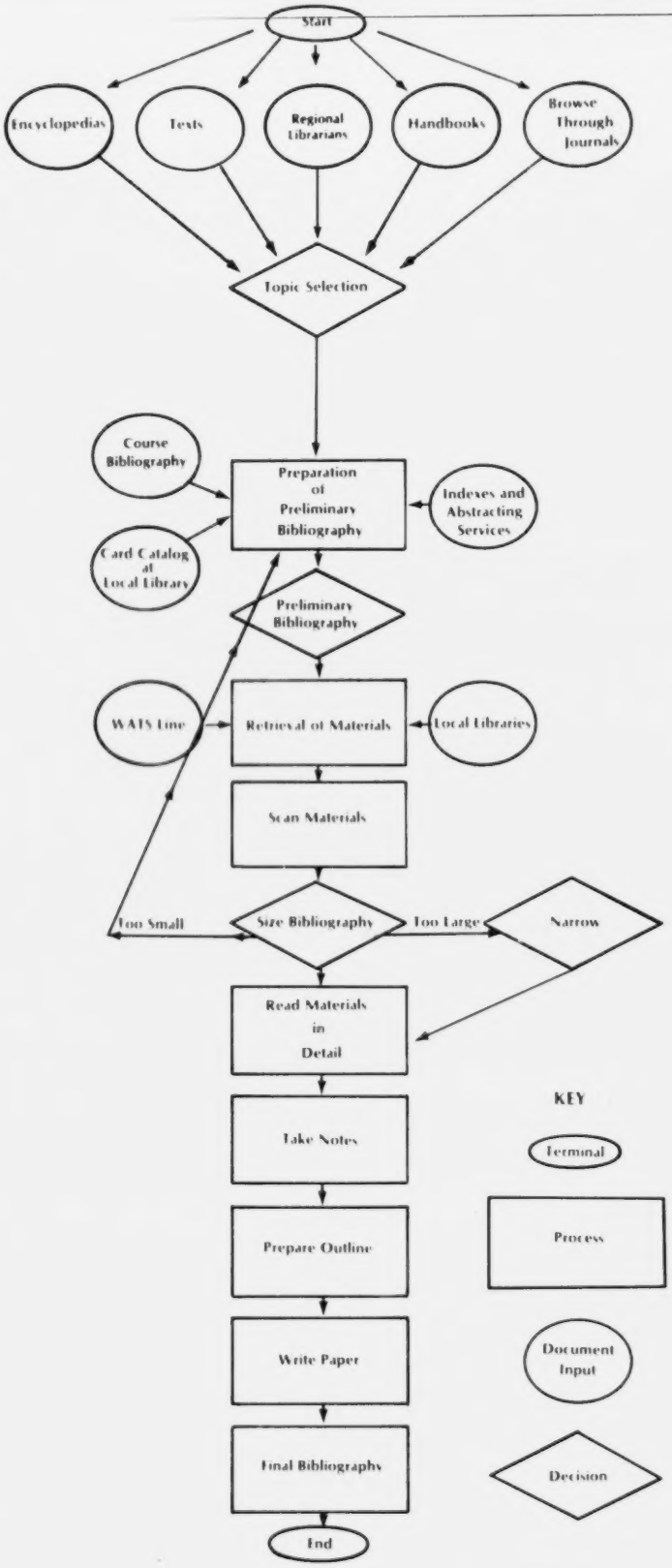
Chances are that you have already conducted informal searches for information. Perhaps you had to do a class paper "on the Civil War." Or you may have gone to the local library to look up information on how to upholster a chair, or called your local extension agent to find out why raspberries won't grow in your garden. These are relatively simple searches that don't require much advance planning. The question to be answered by the research is pretty clear, and the likely sources of an answer are fairly obvious. You can often solve these simple research problems by the trial-and-error method.

In this manual we are exploring the kinds of research problems that don't have clearly defined questions, and ones that may require you to go through many steps and stages before you can locate and use the information you need. Many of the research tasks you encounter in college courses are complicated in this way. Also, the problems you encounter in your career, or in working on complex or controversial community projects, may require this kind of careful search for information.

STEPS IN THE RESEARCH PROCESS

Complex research projects require a carefully planned approach, including several important steps that you must take before you begin to actually search for information. In this section we'll discuss the following steps in the research process:

- Analyzing the research topic
- Defining the research question
- Gathering initial information
- Retrieving information
- Documenting your search
- Evaluating and assessing information
- Forming an hypothesis



Please bear in mind that the research process doesn't always move in a straight line. Often, you must backtrack and reconsider your strategy once you get more deeply involved in the material. Paths that seemed promising turn out to be dead ends, but you also discover new ways of approaching the subject as you learn more about it. A good picture of the way the research process works is provided by this "flow chart" prepared by the Central Michigan University Library:[1]

Note the many "decision points," represented by diamond-shaped boxes, where you must decide on what you are researching, what materials are relevant, whether you have enough materials, whether you have defined the topic properly (so that it is neither too broad nor too narrow). Note, too, that this flowchart specifically shows a search leading to a formal research paper ("term paper") in a college course. The process is similar for other types of research projects, although the final product may be quite different — a speech, presentation, memorandum, etc.

[1]Source: CMU Library Guide, 1984, published by the Central Michgan University Libraries. Reprinted with permission of the publisher.

ANALYZING YOUR RESEARCH TOPIC

If you are conducting a research project in response to a college assignment, you are probably starting out with the instructor's description of the assignment. If you're exploring a topic on your own, it is equally valuable to spend a little time determining just what the "assignment" is.

No matter whether you are doing research for a course, in your work, or for personal interest, you will often need to start by clarifying the assignment.

Since you're the one who has to figure out what to do, you will need to take responsibility for initiating discussion of the topic with the person who has assigned it. If you are working completely on your own, you will still find it valuable to clarify what you want to get out of the project. Are you just curious? Or do you need the information in order to make an important decision, such as making a career change or choosing sides on a political issue?

When you analyze a research assignment, pay close attention to the verbs. Are you being asked to:

describe? explain? tell about? compare?

analyze? give the history of? evaluate?

If you are doing a research project that is not part of a course, you may or may not have many specifics to go on. For example, in your work you might be asked by your boss to "find out about the poor performance in the shipping department." Once you begin to investigate the problem, you will need to decide how to approach it. Will purely descriptive material be enough? Or do you need to go further and try to develop an explanation for the facts? Or is your boss really interested in having you propose a solution to the problem?

A useful tool for analyzing a research topic is Bloom's Taxonomy. (See Appendix E.) In the sections that follow, we will be primarily concerned with relatively complicated types of research problems, ones that involve verbs that are fairly far along in the Bloom taxonomy (analyze, evaluate, compare, assess). The process of defining a research question and seeking out information is very similar when you are asked to do some of the simpler tasks (describe, tell about, identify).

DEFINING YOUR RESEARCH QUESTION

You start out on any research project because you want to find out something you don't know. Sometimes you're just curious, but more often you need the information for a particular purpose. In either case, the first step is to try and figure out the research question. Expressing the problem to be solved in the form of a question to be answered will often give you the first clue about how to proceed with the project.

In college classes, defining the research question is often the end result of the process of narrowing the topic for a term paper or class project. For example, let's suppose the course is U.S. History from 1850 to 1875. A term paper is required, but there is no specific topic, other than that it must be about something in the period covered by the course. The first step is to determine what you will research from this quarter century of U.S. history. As part of this process, you might need to discuss the topic with your instructor, to determine what kind of approach is expected.

As the search strategy flowchart suggests, you start with some fairly general sources (the textbook, encyclopedias) to get an overview of what's possible. Let's say that in your preliminary reading you become interested in some of the persons who served in Abraham Lincoln's cabinet during the Civil War. In particular, you are interested in William H. Seward, the Secretary of State. Lincoln's assassins also tried to kill Seward. Did this conspiracy have some larger purpose than just getting rid of Lincoln? Congratulations! You have just narrowed your topic (from 1850-1875 to the Civil War to Lincoln's cabinet to the assassination conspiracy), and you have asked a preliminary research question that will get you started. (As you learn more about the topic, you may change the question somewhat.)

GATHERING INITIAL INFORMATION AND FINDING LEADS

Most systems for retrieving information require you to start by choosing a few key words to look up. This is true of card catalogs, books, indexes, encyclopedias, periodicals, computerized

search systems, and so forth. Therefore, your first step is to look at your research question and jot down a list of possible key words that might lead you to sources of information. For the example we are using here, you might start with:

Lincoln, Abraham
Seward, William H.
Civil war, U.S.
Stanton, Edwin M. (the Secretary of War, who was supposed to be protecting Lincoln)
Booth, John Wilkes (Lincoln's assassin)
Surratt, Mary E. (accused of being part of the plot)
Johnson, Andrew (the vice-president; one of your preliminary sources mentions that he was supposed to be assassinated as well)

With this list in hand, you can begin to search for more detailed sources of information. As the flowchart suggests, you may start with the bibliography in your textbook, or with one prepared for the course by your instructor. Then you will move on to the card catalog at the library, and to various reference works that provide indexes or abstracts (brief descriptions) to articles that may be available on your topic. See the section on libraries and card catalogs, p. 43, for more information on how to use the card catalog and reference books.

RETRIEVING THE INFORMATION — PLANNING THE TASK

Once you have prepared a preliminary bibliography of materials you think you will need, you should do some detailed planning about how to obtain them. For materials that are listed in the card catalog of your local library, you will need to check to see what is actually available. You may have to ask the librarian to put a "hold" on items that have been borrowed by others, so that you can borrow them next. There's even a chance that an item may be missing. In the case of items that you have located in indexes or bibliographies, you may need to ask your library to make arrangements to borrow them through interlibrary loan (ILL) (see p. 38 for more information).

Go through your entire bibliography and jot down:

- where you have located the item
- how long it will take to get it
- how long you can keep it once you get it

With this information, draw up a rough time line for your research project. If your preliminary bibliography contains only a few items, you should allow additional time for ordering more materials that you may discover when you study the first batch. Will you have enough time to complete the project? If not, is there a faster way to go about it? (For example, by driving to a larger library where you might be able to use some of the materials, or make photocopies.)

DOCUMENTING YOUR SEARCH ALONG THE WAY

Get in the habit of keeping careful notes about every source you consult during your research. The easiest way is to keep a pack of 4 x 6 cards with you and jot down the bibliographic information about each item you find. You will need the information when you prepare the footnotes and bibliography for your paper. Even if your "product" doesn't require formal documentation, you should keep a card system so that you can retrace your steps later. A source that doesn't look very important at first may suddenly turn out to be the key to your search, and you want to have a system that will help you get back to the item quickly, easily, and surely. Here are some samples of what bibliography cards look like. Note that this researcher has jotted down where the item is available, as well as the regular bibliographic information.

Catton, Bruce A Stillness at Appomatox
Garden City, NY. Doubleday & Co., 1953

Copy missing from Carston Library
Available in interlibrary loan from
State Regional Library

BOOK

Hamilton, Alexander, "The Federalist No. 7"
in The Federalist Papers by Alexander
Hamilton, James Madison and John Jay,
New York: Bantam Books, 1982
pp. 27-32

Carston Library collection

JOURNAL ARTICLE

Findlata, Richard, "The Arts Council and
Its Cities," Encounter, Vol. XLI,
No. 6 (December 1973), pp. 91-92

Microfilm at Central State College
library. Copying fee 25¢ per page.

WORK IN A COLLECTION

At this stage, you don't need to be too concerned about the form in which you take down the information. The most important thing is to be sure that you record all the information accurately. Check the sample notes and bibliographies provided in Appendix A to get an idea of what you need to record for each type of source.

Your bibliography cards should not be used for notes about the content of the items you find. Instead, keep a separate set of cards for notes. Jot down the author's last name and a shortened version of the title so you can tie your note cards back to the information on the correct bibliography. Here are some other suggestions:

- put only one piece of information or one topic on each card (otherwise you won't be able to sort them by content later)
- put some key words at the top of the card to be used for alphabetizing the note cards by subjects
- be sure to note the page number where you found a piece of information
- use 4X6 or 5X8 cards so that you will have plenty of room to write

Below, you will see an example of a note card where a researcher has taken some notes from a source that might have something to do with the sample topic we have been discussing.

Later, the researcher will have to decide which keyword to use for alphabetizing this card. Note that the researcher has included a brief quotation, together with the exact page, in case he decides to use it in the final paper.

BRIEF AUTHOR & TITLE

KEYWORDS

Catton, Stillness — Stanton, Kilpatrick, Amnesty

Stanton supported Judson Kilpatrick's plan to raid Richmond, free Union prisoners, & distribute Lincoln's amnesty proclamation. Stanton: "... had a weakness for fantastic schemes." (p. 5)

NOTES, A QUOTE, AND PAGE NUMBERS

EVALUATING AND ASSESSING WHAT YOU FIND

As you gather more information about your subject, you will start to find contradictions and inconsistencies. Different sources will draw different conclusions, or use different evidence. Part of your job as a researcher is to weigh what your sources say and try to determine what is true or accurate. This may not be easy, but here are some guidelines:

- Check the dates of conflicting sources. If one is much more recent than the other, it may mean that new evidence has recently become available.
- Examine the bibliographies of conflicting works to get an idea of the sources they are using. Gradually, you will start to build up a picture of who is quoting whom.
- Seek out more sources. Maybe there is a consensus among most of the experts. At least, you may find more detailed or convincing support for one position or the other.
- Make your own judgments about the validity of the evidence presented by the various sources. And don't be afraid to take a hard look at the reasoning as well.
- Don't try to go it alone. Discuss the issue with other students in the class, with your instructor, with other people whose judgment you trust. These people may not be familiar with all the detailed information you have studied, but they may be able to help you get a new perspective.

When you prepare the paper or report of your findings, you will need to explain the various points of view and justify why you have chosen one or the other — or how you arrived at a conclusion on your own.

FORMING AND TESTING HYPOTHESES

An hypothesis is a tentative answer to a research question.

At some point in your reading and other research, you will feel sufficiently sure of your facts to give an answer to the question you posed when you set out on your search. Let's say that your initial topic was: *The plot to assassinate Lincoln, Johnson, and Seward*

You then posed the research question: *Did Edwin M. Stanton have anything to do with the plot to assassinate Lincoln, Johnson, and Seward?*

After reading a number of books and articles about the subject, you decide: *Edwin M. Stanton would have liked to have seen Lincoln, Johnson, and Seward dead, because he wanted to rule the country, but he was probably not involved in the plot.*

This is your hypothesis. Once you have stated it, the remaining part of your task is to test it by carefully examining any evidence that might disprove your hypothesis. (You will also continue to gather any additional supporting evidence you can find.)

Try to imagine what types of evidence might serve to disprove the hypothesis. In this case:

- evidence that Stanton met with any of the conspirators
- or with anyone who met with them
- or sent or received any communication to/from these people
- any hearsay evidence from others that any of these things happened

This may help you search more deliberately, but you should also keep an open mind toward other evidence that either strengthens or weakens your case.

WHAT IF IT FALLS APART?

As we warned at the outset, the research process doesn't always proceed in a straight line. Don't be too surprised if your hypothesis won't stand up under all the evidence. Sometimes it's just as important to reject a false hypothesis.

If you start to doubt the truth of your hypothesis, try modifying it.

Does the opposite statement seem any truer? If not, what lies between the two?

Finally, if you can't get a satisfactory answer to your research question, go back and take a look at the question. It may just not be possible to answer the question you have posed. Even this is useful to know. Maybe your final conclusion in the example we have been using is that there just isn't enough solid evidence to answer whether or not Stanton had anything to do with the plot.

V

HELPFUL HINTS FOR CONDUCTING RESEARCH

To be successful at research, you need to be able to follow steps like the ones we have outlined here. But you also need to bring the right set of attitudes and communication skills to the process. Here's a summary of things you should bear in mind as you go about your research.

Beware of assumptions. "I was held up at the bank" can be interpreted two ways. Always check accuracy and conclusions, your own and those of other people. Be prepared to show proof. Notes and citations are usually sufficient if they are complete.

Follow directions carefully. If there is a reference to an appendix, read it. You will probably find useful information there that is not repeated in the main text.

Keep detailed records and notes. Arrange them logically, and keep them in a safe place. Teachers, librarians, and research manuals can guide you. A missing page reference for a quotation will create more work and waste your time. Notes regularly filed at home will still be there if you lose your school bag or briefcase.

Evaluate and clarify, in the beginning and all along the way. Most reference librarians will tell you that the difficulty lies less in finding the answer and more in helping the searcher define the question. "I want to know about flowers" is too broad a question. Do the answers work for you when you get them? If not, why? Identify goals, needs, criteria, what is missing, best uses of information, etc.

Problem-solve by making associations, hypothesizing, and testing. "What if...." This means taking an active approach to the information you find: If this is so, what follows from it?

Always focus on the quality and relevance of the information. Everything possible on frogs will not help if your assignment is chipmunks. The detail in Audubon's books on birds will be greater and more accurate than that in a current newspaper ad.

Do not be afraid of in-depth, intensive research once you have skimmed some sources and identified the need to go beyond quick reference, results can be dramatic. Whichever kind of research you do, exercise control so you avoid loss of valuable time and achieve high quality results. Wandering around does not help. Find out where you need to go first, and when it is least busy. Decide how you will start and manage your research. Write down call numbers so you don't forget them on the way to the shelves. Use current material first, older sources later; judge their reliability.

Question. Especially, question assumptions. Also, ask for help every time you need it. Then say "thank you."

Persevere. Keep working if you are not entirely satisfied, or feel you are missing information, even if others tell you to give up. It took Arthur Hailey years of hard work, but he finally succeeded in his genealogical research. His book *Roots* was a hit, and a positive influence on the lives of untold numbers of people. If Hailey had accepted the commonly held idea that "there is no information about the African ancestors of American blacks," he would never have completed his project. The usual problem is not that the information doesn't exist, but rather that you haven't yet figured out how to find it.

You have a good brain — use it! Do your own work. Believe you can and will succeed. Trust your intuition. Research isn't some special activity that only a few superstars can manage to perform. Every day, all kinds of people successfully undertake all kinds of research projects under all kinds of circumstances. You can do it too.

Plan. Give yourself and others enough time. Organize and schedule your work carefully, and continue to be organized. Lists, outlines (in your head if not on paper), appointments, calendars, filing systems, and logs all make work easier.

Be considerate. Follow through and complete. Whatever you use or borrow, return in good condition promptly. Do not write in borrowed books. If you find facts you do not like, respect them as reality and do not change them. The world will not stop if you get an unexpected or undesirable finding. If you come up with unanticipated findings, it does not mean that you have failed. All it means is that you must revisit your own theory or hypothesis and revise it in light of the facts. After all, if you knew exactly what you were going to find, why bother with the research?

Master the language(s). Learn the special terms for the subject with which you are working. Learn to translate across and between subjects. Ask a librarian about "circulation" and you will hear how many books were borrowed. Ask an architect and you will hear that people entered at ground level, into a hallway, and moved to different levels by stairs and elevators. The design and construction of a library building will be better or worse, depending on how well the librarian and the architect understand each other. In the same way, your level of success in research will often depend on how well you communicate with those who can give you information, or who can help you find it.

Identify and master the tools and methods. You will work differently at a library card catalog than you will at a library on-line computer catalog. Take advantage of both technological advances and traditional resources.

Everyone should have a good dictionary and a good thesaurus.

Make best use of your human resources. Interview and talk with people frequently. Get referrals, and network with everyone. Don't just interview a resource person about the topic of your research; ask about others who may be able to supply additional information. It is useful to build a file listing everyone you know. Inventory and list their skills, resources, connections and interests. Make a subject index for your resource bank. At the flip of a card you can know who is there to help you, how and when. You can put people together when you need help. Inventory the kinds of resources that are missing. Figure out categories of people (waiters, police officers, etc.) who can fill in the gap. Work out a plan so you can meet them and have them available to you as resources. Most people are flattered to be asked for help, and are generous in giving time and assistance if you are clear about your needs and respect their time limits.

Avoid becoming biased. An issue that triggers an emotional response in people, such as war, can be difficult to consider in a balanced way, especially if you have made a personal decision about it. There is always some merit in understanding an opposing position; if someone has taken the opposite view, then there is probably some reason for it, and you should check it out. Investigate fully and treat fairly both sides of an issue. As we have already noted, the facts may not turn out to support your initial position, and this is okay. You will be more able to avoid bias if you set out to find facts which support a position, rather than to declare a position, and then try to find the facts to support it.

Brainstorm all possible approaches and solutions, no matter how silly they may seem. Problem-solving is a matter of making associations and testing hypotheses. You need ideas to work from and with.

Organize your research steps — set your priorities. If you know that more information can be found on a subject in periodicals, search the periodical indexes for articles before you look for books.

VI

It seems to be the most natural strategy in the world to begin a research project by going to a library and using the reference and circulating collections with the help of the staff, for purposes of formulating and answering research questions. Because libraries are such an important information source, we will spend a good deal of time in this manual discussing how you can make best use of them. But the rest of the world is also available to us as a resource for study, exploration, learning, decision-making, etc. Here is a checklist to help you get started on finding a wide range of sources of information in your community.

COMMUNITY RESOURCES: A SAMPLE CHECKLIST

PLACES	PEOPLE
____ Libraries	Librarians; support staff (secretaries, et al.), administrators, members of policy or advisory boards
____ Schools	Subject Specialists; Educators; Counselors; Students
____ Government Offices	Departmental Career Employees; Financial and Legal Officers; Appointed and Elected Officials; Politicians; Lobbyists; Town Clerks
____ Non-Profit Organizations	Fund Raisers; Organizers
____ Social Service Agencies	Social Workers; Resource Coordinators
____ Businesses and Industries	Public Relations; Marketing; Personnel; Budget; Service Workers; Information Specialists; Labor Leaders; Negotiators
____ Religious Headquarters	Community Leaders; Advisors
____ Professional Societies	Subject Specialists
____ Clubs	Social Leaders; Special Interest Activists
____ Stores	Buyers; Sales People
____ Communications Services	Investigators; Reporters; Public Relations Experts; Media Technicians
____ Cultural Centers, Museums	Collectors; Conservators; Performers; Curators; Craftspeople; Producers

MEDIA	HARDWARE
Print	
____ Books, Newspapers, Periodicals, Posters, Letters, Microfilm, Microfiche	____ Typewriters, Computer Printers, Microform readers
Audio	
____ Records, Cassettes, Tape Reels	____ Radios, Tape Recorders, Musical Instruments, Telephones
Visual	
____ Video Tape & Disks, Slides, Film, Filmstrips, Microfilm, Microfiche, Artwork	____ Projectors, CRT Display Terminals, Video players, Microform readers

Obviously, the variety and number of resources we can discover and use are limited only by our imagination, motivation, and detective work. It will be helpful if you make a habit of brainstorming and networking with others throughout any research project. Your information base and options for action will expand in proportion to the number of contacts you make. See the Reference Case Studies in the following section for examples of how people have made use of many different types of community information sources.

INFORMATION IS WHERE YOU FIND IT...

VII

INFORMATION SEARCH STRATEGIES: SIX CASE STUDIES

As you can see from the community checklist, there are many information sources in addition to libraries, but so far we have mainly discussed library-type research. We've also mostly discussed research for term papers and presentations in college classes.

The methods used to carry out research in other settings are much the same, but there are many special twists depending on what sources you are using, and what sort of final product you must prepare.

Below, you will find five case studies describing how people have carried out research projects in very different circumstances. Read through these case studies to get a feel for how to proceed with a variety of types of "real world" research. You may find it helpful to jot down some notes on how you would have gone about locating the information, or what resources might have been available to you in your community.

REFERENCE CASE STUDY #1

Situation: A writer wants to make the point that people are responsible for knowing the law before acting. The writer believes it will be useful to quote the rule that ignorance is no excuse under the law, but does not have the exact wording or citation. The writer found quotations before and expects this one will be in a book that he thinks is titled *Bartlett's Quotations*. The writer is unsure if the title of *Bartlett's* is correct.

Strategy: The writer goes to the library reference department. He considers searching under the subject heading *Quotations*, under *Bartlett* as author, or under *Bartlett's Quotations* as the possible title. The writer decides to use the author approach because:

1) *Bartlett's* as title is more of a gamble, since the title may actually begin with another word. Bartlett as author is more likely. *Bartlett's* as a possible title would be filed close to Bartlett as the author.

2) Search time and effort would be kept to a minimum if it became necessary to switch to title searching in a divided catalog (author and title vs. subjects) that is large and physically spread out; and

3) *Bartlett's* is the resource the writer wants most. Other titles on the subject of quotation would only be needed if this were not found or did not contain the quote. Subject searching can wait.

He checks the card catalog to find out if the library owns the book, and where it is shelved.

In the "B" drawer, *Bartlett's* entries are found. He reviews the Bartlett entries by title, revealing Bartlett, John, *Familiar Quotations*, 15th edition.

The writer notes the call number and then goes to the shelf location. At the shelf the book appears to be missing, but a search proves that it has been put back in the wrong place by a previous user.

The author consults the key word index in the book. "Ignorance" shows no entry related to law. The law entries do show a reference to "ignorance". Page 263, entry 17, shows a quotation by John Sheldon (1584-1654) from his work *Table Talk*, first published in 1689. The meaning corresponds with the rule the writer wants to cite.

The exact words are "Ignorance of the law excuses no man; not that all men know the law, but because 'tis an excuse every man will plead, and no man can tell how to refute him." The writer records the quotation, and its source, as well as the reference where it was located (title, author, editor, edition, page, entry number).

REFERENCE CASE STUDY #2

Situation: A student in an Introduction to Psychology course has been assigned a short research paper on the topic of mental illness.

Strategy: The student feels uncomfortable with such a broad topic, so she asks the instructor for some clarification. He suggests that, since the previous class meeting focused on the subject of depression, she might research a current approach to treating this illness. He also explains that the research should include consultation of at least one social science journal article.

The student first consults information sources near at hand. She reviews her textbook's presentation of depression and looks for relevant entries in the bibliography. Finding nothing that deals specifically with treatments, she goes to her library's reference collection, where she looks up "Depression" in an encyclopedia of psychology and takes notes on the general information and bibliographical references provided there.

Unfortunately, her library doesn't hold *Psychological Abstracts*, a periodical published by the American Psychological Association, which indexes and summarizes thousands of articles and other works on psychology. (Such bibliographic periodicals exist for many academic disciplines.) She decides to check the *Reader's Guide to Periodical Literature* to see if any recent nonacademic articles might be useful. The *Reader's Guide* directs her to the heading "Mental Illness," and then to the subheading "Treatment," under which she finds a reference to a *Time* magazine article titled "Talk as Good as a Pill." The article reports that a new study funded by the National Institute of Mental Health concludes that two forms of short-term "talk" therapy are as effective in treating depression as a standard antidepressant drug, imipramine. The article also states that drug therapy is increasing, due to pressure from health insurance programs that demand cheap, quick, and effective treatments. This information gives rise to a question: What are the pros and cons of treating depression with drugs?

With help from the reference librarian, she finds the address for the National Institute of Mental Health and requests a copy of the six-page summary of the study's findings mentioned in the *Time* article. She consults the encyclopedia of psychology again and finds, under "Imipramine," reference to an *American Journal of Psychiatry* article that explains the uses of the drug for treatment of depression. Her library doesn't hold this journal, but she asks the librarian for help in arranging to purchase a copy of the article from a library that does.

Armed with general information and references to recent literature on a specific topic, the student continues her information gathering by consulting the library's card catalog under "Depression" and related headings. Having narrowed her topic, she can more efficiently "sift" through the cards for the books most relevant to her research. Her further study is guided by the requirements of the assignment: a short research paper for Introduction to Psychology does not demand the same level of research as a senior thesis.

REFERENCE CASE STUDY #3

Situation: A student wishes to find out if there are glossaries available that explain terms related to the use of the computer.

Strategy: The student goes to the library reference department and asks the reference librarian for help. The reference librarian guides the student as follows:

1) There are two publications by the American Library Association that can be consulted. The *A.L.A. Glossary of Terms* includes computer-related information. *The Guide to Reference Books* might list one or more glossary titles, and will describe and evaluate them.

2) Check the card catalog to see what the library owns in the reference and circulating collections.

The student reviews the A.L.A. *Glossary of Terms* and decides something more specialized and bigger would be useful. Looking in the *Guide to Reference Books* index under "Computers," the student is told to see "Electronic Data Processing." A reference is found to entry EJ210 on page 791, which is in the subject "Pure and Applied Sciences/Engineering/Electrical and Electronic Engineering, Dictionaries and Encyclopedias."

Entry EJ210 is *Computer Glossary for Students and Teachers* by Larry C. Schmalz and

Charles J. Sippl, published in 1973 by Funk & Wagnalls. The review indicates it is one in a series of computer glossaries for businessmen, engineers and scientists, and the medical and health sciences, issued as the publisher's *Library of Computer Science*. The student decides that his sister, who just started a new business and wants a small computer, might like to know about the glossary for businessmen. The student records the information and checks the catalog to see if the library has the book.

The catalog shows no listing for any of the authors and titles in the series, or for the series title. However, among other titles it lists a circulating copy of a 1983 Prentice-Hall publication by Alan Freedman, *The Computer Glossary for Everyone: It's Not Just A Glossary.*

The student goes to the shelf, but the book is missing. He asks the circulation department to check its files to see if it is out on loan. No record is found, so it looks like the book was stolen. The loss is recorded and the student fills out a "hold" form. The information is routed to the Technical Services Department. If the book is reordered the student will be called when it arrives. If a decision is made not to reorder this title, to order a different title, or not to order at all, the student will be notified.

In the meantime, an Interlibrary Loan is arranged with a neighboring library that owns a copy of the book on microfiche. The student can expect it to arrive later in the week. The library's portable microfiche reader is being reserved for the student to borrow when the microfiche arrives, so he can use the book at home. The library reports the next day that *Books in Print* lists the Freedman book as still available for purchase, and that a replacement copy has been ordered.

REFERENCE CASE STUDY #4

Situation: A teacher wants to instruct students on copyright. The teacher tells a friend about the copyright project. The friend happens to have a copy of a pamphlet on copyright published by the American Library Association (ALA). The teacher borrows and studies it. The teacher feels it is a good overview, and the examples are helpful. However, it is a 1977 publication. The teacher wonders if the laws or regulations may have changed since then. The teacher lists other questions, and notes areas that are serious enough to make it worth double-checking the information, "just in case."

Strategy: The teacher looks in *Books in Print* to see if there is a later edition of the publication. There is not. The American Library Association is a responsible organization. Libraries need to know about copyright. Therefore, the teacher figures the existing information in the booklet is still correct, even if new information has not been added.

The teacher finds a number of books on copyright in the library catalog. One is a 1983 publication. The others are older. The teacher feels that even by using the 1983 book, some new 1983 and 1984 developments could be missed. Thus, he decides to go right to the primary source for information about copyrights. This would be the government office responsible for administering the law.

The teacher locates the telephone number for the Office of the Register of Copyrights in the government telephone directory. A copyright expert answers all the teacher's questions and double checks the information. In the space of a few minutes the teacher has had an update on the publication and the law. The government employee is acting in the capacity of an official expert, so the teacher has good reason to trust the information and to rely on it if another source is different.

The teacher was not questioning the 28-year renewal term for pre-1978 publications. However, in the course of the conversation the teacher mentioned it. The copyright clerk told him that the law has been changed: it is now 47 years. Apparently, this change occurred after the ALA publication was prepared. There is no "errata" note in the booklet to tell readers of the change. Anyone figuring the years, to find out if a work is still protected, would make a mistake. The teacher decides it is safer to write up the critical information for his students. The ALA publication will be used only for examples of permitted and prohibited copying under the fair use guidelines.

REFERENCE CASE STUDY #5

Situation: Janet Jones has just graduated from college. With a no-interest loan from her parents she has started a new business. Janet needs to set up personal and business bank accounts.

Strategy: She checks the yellow pages of the phone book under the subject heading "Banks" to find out how many there are and where they are located. Her intention is to survey them to find out how their services and charges compare, so she can make the best choice of banks to take care of her personal and business accounts.

As she goes about town taking care of other matters, Janet stops at banks to collect literature, and to observe how customers are treated. From the literature she finds that there are many different types of accounts and services available, so she draws up a chart listing all the possible services, which banks offer them, and at what cost. For information on more banks, Janet makes phone calls to their customer service departments and asks questions of their staff. She then logs the information on the chart. Once she has all the information, she spends some time looking it all over and analyzing it.

Janet had initially wanted to keep her personal and business accounts in separate banks to reduce the chances of errors in managing the funds. It appears from her analysis that one bank's rates are much better than all the others. In addition, Janet finds that this is the only bank that offers a special service: If she changes from a rotary dial telephone to the more expensive push-button, touch-tone model, she can access the bank's computer 24 hours a day. She can find out her account balances and make transfers any time she pleases, even when the bank is closed. Because customer service in her own business must take priority, and Janet must do most of her bookkeeping late at night or on weekends, this is a very attractive feature. Also, the bank's distance from her place of business becomes less important if she can do banking by phone.

Janet begins to wonder why this bank can offer more services and lower rates than the other banks. Has it been doing this for a long time, as a matter of policy? If so, the expenses of the operation have been spread out over the years, while other banks would face high start-up costs that would discourage them from competing.

Janet calls the Customer Service department at the bank and asks how long the bank has been offering its special telephone service; she learns this service is less than a year old. She asks whether the service charges have always been lower than those of other banks, and finds out that this, too, is a recent development.

She reasons that this could mean one of two things: either the bank is very well managed, or it is headed for trouble. It could be that the bank is well-managed, is making a good profit, and therefore can offer more services than the other banks. Or it could be that the bank is cutting its profit margins dangerously thin, in the hopes of attracting enough new customers to make the gamble pay off.

Janet feels that being associated with a leading bank would be a definite advantage

to her business. She feels just as strongly that she does not want to place her money in a bank whose future is in doubt. Thus, checking out the health and stability of this bank has emerged as a new and necessary question to answer before Janet can decide where to open her accounts. And she needs to move swiftly on this because she has to keep her own business operating efficiently.

Janet reasons that reading the bank's annual report to its stockholders will tell her a lot about its progress in the past year and its plans for the future. However, she is not convinced that this will give an unbiased view of the situation, since annual reports present a picture of the company as the directors see it, and want others to see it. She asks herself who would be in the best position to give an unbiased evaluation, to know objectively how healthy a specific bank is or be able to get reliable information about it — and to do this quickly.

Janet sees stockholders as a research key. People only buy bank stock if they feel it is a good risk and a good investment. Sales are handled by brokers and brokerage firms. Therefore, stock brokers might be one of the first categories of people to know about the health of a bank. She calls a local brokerage house and asks if they can tell her whether the bank's future looks promising. A broker looks in Standard and Poor's Register of Corporations and finds the bank listed with an AAA rating, the highest possible. The broker also does an up-to-the-minute computer check on the Standard and Poor's database that confirms that the AAA rating has held since the last paper issue of Standard and Poor's was published. A historical check shows that the bank's rating has always been AAA.

These findings convince Janet that the bank is not only healthy, but has been stable in the long run, and is likely to continue to be so. Thus, she feels she can use the bank as safely as the others. From her survey of rates and charges, she sees that it would result in a substantial saving if she were to keep both of her accounts in this same bank. She decides to do this, realizing, however, that she will have to be more careful when she makes bank transactions, and that she will have to spend more time monitoring the bank's handling of transactions until she is sure they are managing her accounts accurately. She assigns these tasks, and the new phone she has ordered so she can use the computerized banking features, as start-up costs; she believes they will be a good trade-off for long-range savings.

REFERENCE CASE STUDY #6

Situation: The city of Middleburg is about to celebrate its centennial year. The city began as a railroad junction, and the local railroad has continued to play a major part in the economic and political life of the town. The chairperson of the Centennial Committee feels that the celebration should include an exhibit or other activities commemorating the role of the railroad in the city's history. Since there is an active railroad club in town, he asks the president of the club to take responsibility for handling these activities.

Strategy: At the next meeting of the railroad club, the president finds five volunteers who will join him in working on the centennial activities. The committee agrees to meet the next night to get started.

At their meeting, they brainstorm and evaluate possibilities for a display, taking into consideration the short schedule and the tight budget. They come up with a plan, arranged in order of priority. They will start with a list of necessary things that must be done; if they run out of time, then they can omit their second list of tasks related to things that are

desirable, but not essential. The end product will be a display at the local fairgrounds during the celebration.

The next step is to decide who will do which tasks. The committee members take on tasks they feel they can do, based on their interests and expertise.

Sue Girard, who works for a local advertising agency, is to handle the visuals for the display: slides, photographs, drawings, graphics work. She starts by investigating what video material might be available in addition to the old-time 8 mm footage at the public library. She looks in the yellow pages under the subject heading "film" and is referred from "film rental libraries" to "motion picture film libraries." She also finds listings for "film producers and studios." She calls everyone under these headings, but she is not doing it with the idea of either producing a film or doing much renting (the budget is too small). She does it because these people work in the film field every day. They can give her the names of trade publications, refer her to other people in their network of contacts, and give her lots of first hand information about what may be available. She needs this basic information to help her plot out a strategy for finding what is available.

From one vendor she learns about a local history course being taught at a nearby college. From another she hears that one of the grade schools used to have a collection of glass negatives of locomotives that had been donated long ago by a now-deceased graduate. With the third resource, Sue spends an hour going through the company's collection of film and videotape catalogs, which they receive regularly from producers and sales representatives.

A review of the film "Death of A Gandy Dancer" describes a segment in which an old man and his former partner re-enact for his grandson the way that railroad ties used to be laid by hand, and the work song that accompanied this hard labor. Sue decides to preview the film, with the idea of making a continuous-loop videotape for the display. She writes to the vendor, who is also the copyright holder. Because time is limited, she uses this opportunity to also request permission for use and reproduction. She explains the project, her idea for the use of the film segment, the problem raised by the project design, which will not permit her to stay within the single-use provision of the fair use rule, and that it is possible that there may be an admission fee to the exhibit.

A week later, Sue receives a phone call from the film distributor in New York giving her verbal permission, with written contracts to follow, on the condition that proper credit is given and a $50.00 royalty fee is paid within the month. Sue makes notes of her conversation and reads them back to the vendor's representative for confirmation, to be sure her understanding is correct. She logs the date and time of the call, and the name of the representative. Sue uses this as her authorization to proceed with the arrangements. She arranges for a check to be sent and prepares a credit statement that includes the wording required by the vendor.

Sue calls the Media Center administrator at the local school district and makes an appointment to discuss how she can help with the project. Sue and the administrator agree that the school district's equipment will be made available for previewing the film. If the film segment is to be used, the media center staff will then videotape it and the committee will reimburse them for supplies. The center won't be able to provide services during the week of the centennial because all their equipment is scheduled for overhauling and the staff will be away at a convention. The administrator gives Sue the name of a rental agency that has helped the schools in emergencies. She also tells Sue that the collection of glass negatives was placed on indefinite loan to the State Historical Society, and gives her a letter of introduction granting permission for the negatives to be used for the centennial.

Sue writes a letter to the rental agency manager explaining what she needs and asking if he can help out. She makes a note of this letter on her calendar, and then makes a note to check on the matter after one week. While awaiting the response, she goes to the "morgue" of the local newspaper to see what train photos they may have in their back files. One of the veteran reporters comes in to do some research and they strike up a conversation. She tells him she does not recognize the locations in some of the old photos. He explains that there was a brief period when the railroad was using a spur, run off its main track and laid to cross what was then a major street. There was a serious accident at the crossing and the city forced the railroad to tear up the tracks. In the last decade the city reconstructed that street and the area is completely changed. She makes copies of the photos and articles to include in the display, and makes notes of her conversation with the reporter.

Next, she pays a visit to the Street Department. There, she gains access to the historical archives of old street maps. Using them and a current street map, she makes reproductions on clear plastic, in enlarged form, creating an overlay to show how the area is now different.

Sue sends her request for use of the glass negatives to the Historical Society. She also asks for guidance as to the proper handling of these fragile materials. As before, she enters the date of the letter on her calendar and makes a note to herself to check on the response in a week. In the meantime, she receives an okay from the rental agency manager. The firm will donate the use of their equipment for the display, as a public service. Sue assures the manager that his firm will be given tax-deductible credit for its contribution, and sees that is arranged by sending a letter acknowledging the market value of the donation. She keeps all the documents carefully filed and enters all actions on her calendar. To make her job easier later on, she begins a list of people and agencies to whom she will send letters of thanks at the conclusion of the project.

A trip to the college and a visit with Professor Wise, who teaches the local history course, is the next item on Sue's agenda. Their discussion reveals that each student in the history class has to complete a special project, and one student is interested in doing something for the centennial. Sue proposes an oral history interview with the reporter of the train accident story, and with any witnesses or officials that were involved. Sue's copy of the newspaper story provides a list of names with which to start. They look up the names in the City Directory to find addresses for the witnesses and officials who are still living in the area. Professor Wise agrees to act as contact person and assist the student with oral history techniques. With help from the school district Media Center, Sue arranges to have the interviews videotaped, so that an edited tape can be prepared, to be shown at the centennial.

A few days later, Sue receives a letter from the Historical Society confirming the loan of the negatives. The curator of the society also provides instructions for handling and display, and Sue makes the necessary arrangements. She then calls the national headquarters of the railroad company and asks to speak with someone in the public relations department. Do they have any posters, tickets, schedules, or other artifacts that could be used in the display? She explains that the precautions that are being used for the negatives can also be used to protect the railroad's memorabilia. With this assurance, the public relations officer agrees to send her some items from their museum if the subcommittee will cover the postage both ways. They agree on shipping details and schedules, with written agreements to follow.

At the second committee meeting, Sue reports on the results of her work. Other members have also been busy. Like Sue, they have been pressed for time, making extensive research in books and other written sources a practical impossibility. All the members of the committee have had to carefully target places where they would be likely to find information, and they have had to make creative use of people as primary resources in getting what they need for the centennial display. Their choice of networking as a primary strategy for research has paid off in the speed and completeness with which they have been able to get their project needs met. Comparing notes, they find that they have done most of their research without going to the local library. They have used the library as a source of necessary reference books, such as the City Directory and telephone books for distant cities, but most of their actual research has been carried out through direct contact with individuals, companies, and agencies.

VIII

Libraries are the major information source you will use for most research projects. Even when most of your information comes from non-library sources, you will probably use a library at some point in the research process: to define your research topic, locate non-library resources, or confirm information you have found elsewhere.

In this section, we will discuss the types of libraries that may be available to you, what kinds of information they can provide, and how the information in them is organized. Appendix E contains maps and lists showing libraries in your geographic area.

TYPES OF LIBRARIES

Almost every town or city has at least one library. Sometimes there are many. All libraries share the common goal of assisting their own patrons in locating information. Whenever possible, they help others as well.

We move from place to place in our daily lives. Our information needs are often unexpected and complicated. Even students studying at the largest universities, with campus-based libraries containing millions of items, find themselves looking beyond their immediate environment for solutions. For those attending a college without walls, or who are not enrolled in a school at all, this searching for outside resources occurs even more frequently.

If we can understand the different roles that different libraries play, and the way they relate to each other, we can be creative about getting access to their combined resources — locally, regionally, and nationally. Here is a brief overview of the types of libraries you may find in your area, together with some information about what kinds of collections and services they may provide.

1. School Libraries: in grade schools and high schools.
2. Academic Libraries: in colleges, universities, and graduate schools. Users are engaged in more intensive and higher levels of research, and pursue such research more independently. "Academics" (as librarians refer to them) may contract with the government to serve as depositories of government publications.

   Public (tax supported) and private school and academic libraries are "curriculum centered": they collect materials on subjects being taught by the institution, and sometimes have little beyond that.

   They are sometimes called Media Centers, Educational Resource Centers, Information Centers, or related names. A library fee is included in the cost of tuition for students. If you are not a student at that school or college, it may still be possible for you to borrow books from the library, and you may also be able to do research in the library. The circulation librarian can give you details. Since academic libraries are intended to serve the needs of students and teachers, training in bibliographic methods is usually a part of the academic
3. Special Libraries: in businesses, professional associations, government agencies, hobby groups, and other "special interest" organizations. Their collections are also closely focused on a specific work or interest area, often with not much else available. They are intended to serve the needs of their employees, members, or a special audience. Library staff may not be included in their budgets.
4. Public Libraries: in local communities, traditionally a department of municipal government. Because they are intended to serve the general life needs of everyone in their particular city or town, they collect information on many subjects. Their collections have "breadth rather than depth." Sometimes public libraries have made in-depth collections of materials in

certain subjects and there will be one or more "special collections" within the library. Staff can show you how to use the library and its resources. "Publics" may also be government depositories. Non-residents and non-taxpayers may have to register and pay a subscription fee to borrow materials.

5. State Libraries: headquartered in state capitals, with regional branches. They function as an arm of state government, and are usually funded by a combination of state and federal monies. They are direct backup for and service providers to local public libraries. Thus their collections are broad. They may interact directly or indirectly with school, academic, and special libraries. Depending on policies, they may also serve the public directly, as well as indirectly through other libraries. "States" may or may not have a wide variety of other responsibilities. They may oversee the state's school and academic library programs and standards, manage archives and public records programs for the state agencies, serve the research needs of the state legislature and courts, and act as depository libraries. Therefore, their collections may also have depth.

Because they limit the number of subjects on which they collect information, and because they try to collect as much information as they can on their chosen subjects, school, academic, and special libraries are often described as having "depth rather than breadth."

When a collection in any type of library becomes so strong that it is known as a key resource, it may be referred to as a research collection.

Because of the high cost of materials and operations, no one library can be expected to have everything. Neither can all libraries justify unnecessary duplication of materials. Libraries try to achieve a balance between collecting to meet identified regular client needs and sharing to satisfy infrequent needs. One technique they use is "cooperative acquisitions," jointly deciding who will specialize in buying what subjects, and a second technique is arranging for patrons of one library to use material owned by another library, at that library or through "Interlibrary Loan."

IX

INTER-LIBRARY
LOAN

When a library does not own material or equipment needed by one of its patrons, it can contact other libraries and ask for a loan. An owning library can refuse the request if the item is not allowed to leave its premises (i.e., it is non-circulating). Otherwise, it can send the item to the requesting library. The owning library may require that you use the item only inside the borrowing library's building under supervision. Or it can permit the material to "circulate" so you can take it to your home or office.

The owning library decides how long it can let the item be away, and therefore unavailable to its local patrons. The borrowing library is responsible for making sure the item is returned by the loan period deadline. If items are late being returned to the owning library (overdue), it can refuse to make future loans to the requesting library.

Interlibrary Loan (ILL) is a courtesy extended by libraries to each other. Patrons of one library cannot get an ILL from another library on their own. You have to ask your library to do the borrowing for you. A standardized form is used to request and keep track of loans. You are expected to supply the necessary information. You can ask for direction from library staff in doing so.

If you want an interlibrary loan, you should ask about costs, and be prepared to pay as advised. At a minimum, the borrower is expected to pay transportation costs, along with any insurance and special packing required. Loans are usually sent via the U.S. Postal Service, but sometimes other delivery services are used. It is not customary to allow a patron to pick up loans from the owning library, because of the way the system is organized and the paperwork involved.

While ILL is a valuable option it can be slow, averaging anywhere from 2 to 6 weeks. One alternative is to request and pay for copies of material. Another alternative is to use materials and equipment at the place of ownership. This may require a special request by your own library, and sometimes a refusal will be received. However, most libraries permit on-site use by others if it does not interfere with serving their primary clientele. A phone call ahead can confirm whether access is possible, and on what terms.

X

COMPUTERS IN THE LIBRARY

Computers have become important tools in library management. Not every library is yet equipped with its own computer, but the operation of every library is affected by computer systems, and networks have been developed by the information industry. As a user of libraries, many of these developments do not particularly affect the way you use the library, although the computers behind the scenes (perhaps half-way across the country) may make some library operations easier, faster, and more certain. However, there are some aspects of library computerization with which you should be familiar. In almost all cases, there is someone in the local library who will familiarize you with what systems are available and what they can do. You should be familiar with the possibilities so that you can ask the right questions to get what you need.

Here is a brief description of the various types of computerized systems and services that may be available to you at libraries:

Computerized catalogs: Many libraries have begun to replace their card catalogs with computerized systems. If the library you are using has gone to this system, you will know it immediately, because you will find some sort of computer terminal where you would expect to find the card catalog. Since these systems are intended to be used by the patrons of the library, they are usually quite "user friendly." In general, there will be instructions posted, or a person will be on hand to assist you in getting started. You do not need to know anything about computers to use these systems. It will usually take only a few minutes to get the hang of it, and then you will find that looking things up in the computer catalog is faster, easier, and more thorough than searching through the old-fashioned card catalog.

ERIC: This stands for Educational Resource Information Center, a nation-wide computerized database funded by the U.S. Department of Education. It contains hundreds of thousands of books, articles, and reports on every conceivable aspect of education. Many of these items are unpublished, and thus would be almost impossible to get through any other means. If your library has a computer terminal connected to the ERIC system, you may be able to search the database directly. Otherwise, you may have to use the huge hardcopy index. ERIC gives you abstracts (brief summaries) of the items in it, and you can then order copies of things that interest you. Microfiche copies (which you will have to read in a special machine at a library) are usually free; printed versions (known as "hardcopies") of some items are available, usually at a nominal cost.

OCLC: The Online Computerized Library Center is a service that you do not use directly, but it may be very important to your research. This nationwide system contains records of millions of items in several thousand libraries. When a library wants to locate an item to borrow through interlibrary loan, the usual procedure is to search by means of OCLC to find a library that owns the wanted item, and is willing to lend it. OCLC also provides an electronic means of ordering the materials through interlibrary loan, often at great saving in time. If you have access to a library that is part of OCLC, you will probably find that your interlibrary loan requests are handled quickly and efficiently. (Libraries that are not part of OCLC usually have to send their interlibrary loan requests to an OCLC library, which may cause delays.) When you are deciding where you want to do your research, you may want to inquire about the library's participation in OCLC.

Computerized databases: If you have a home computer, you probably know that you can get access to hundreds of computerized databases, either by connecting directly to them, or through services such as Compuserve or The Source. Many libraries now offer the

service of connecting you to these databases. In addition, libraries may be able to connect to some databases that are not generally available to individuals. You do not need to have extensive knowledge of computers to use these services; as with computerized catalogs, someone at the library is assigned to show patrons how to use the system. At some libraries, the searching is done by one of the librarians, rather than by the patron.

There are often charges for the use of these databases; check with the library before you begin. Charges will vary depending on the database, and they are usually based on the amount of "connect time" you use. Even if you have a home computer and modem (the device used to connect to a database over the phone lines), you may find it more economical to use a library's system.

Microcomputers: Just as you can usually get the use of a slide projector or tape recorder at a library, many libraries now have microcomputers available for their patrons to use. Generally, you must use the machine at the library, although portable microcomputers are becoming more common, so this may change. Along with the microcomputers, libraries have software to allow you to carry out common computerized operations: wordprocessing, spreadsheets, database management, graphics, and programming in various languages.

You will need some training to do any of these operations. In some cases, libraries provide classes, and in other cases you may need to take a course at a local college or high school adult education program.

Word processing, which may be the single most useful thing that a computer can do for you, is not difficult to learn. A couple of hours of training, and someone to whom you can turn if you get stuck, are all that that you really need.

If you are doing an elaborate research project, you may find a database management system useful in handling your information. For example, you can use it to keep track of all your bibliography information, or to record and process the results from a survey. These systems are more difficult to handle, so you will probably need to arrange for some formal training.

XI

Most catalogs are card files. There are also catalogs in book form, on microfilm, on microfiche, and on computers. Library staff are trained to show you how to use each form efficiently.

The catalog is the finding tool used by the public, to learn what a library owns and where it is physically housed. Ideally, it is a comprehensive inventory of everything in the library's "holdings," but this is not always achieved in practice. Here are some of the important exceptions:

- Books are always listed, but audio, video, and other types of material may or may not be.
- Book and non-book items stored separately from the rest of the collection may have their own smaller catalogs, and entries may or may not appear in the "main" catalog.
- Pamphlets, clippings, and other miscellaneous materials are ordinarily kept in a "vertical file," in folders that are filed alphabetically by subject, with no further records being kept.
- Libraries often keep separate lists of titles of periodicals (magazines and journals) that are available at that library. In this case, the periodicals are usually not listed in the card catalog.
- Equipment for the use of audio-visual software is usually available, but rarely is this hardware entered in the catalog.

It is essential to know the extent and limitations of the available catalog(s) in a library. It is essential to determine what other records and resources also need to be consulted, before ending each search for information. If you feel uncertain that you have found everything there is to find, you should consult the library staff. Explain what you are looking for, and what you have done so far to search for it. This will help the librarian direct you to things you may have overlooked.

HOW CATALOGS ARE ARRANGED

For each item in the catalog there is a record of its:

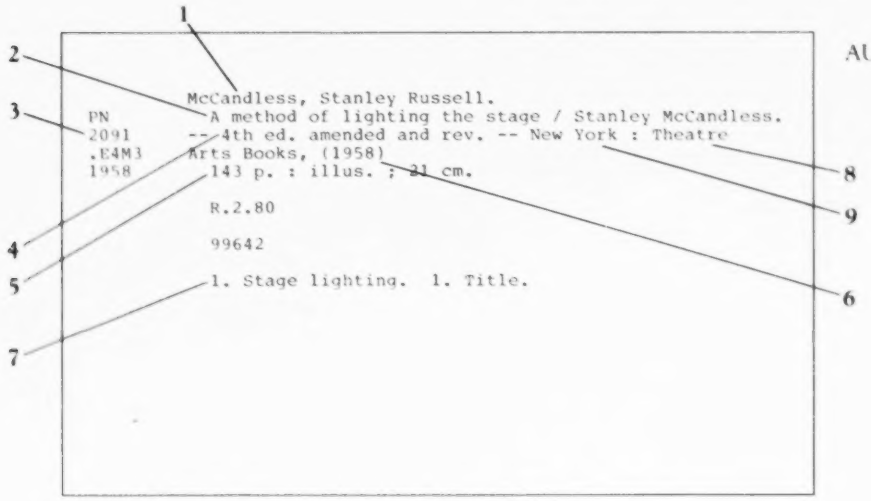
1. Author: the name of the person or agency who created the item;
2. Title: the name of the item; and
3. Subjects: the key words or phrases describing what the material is about — i.e., its content.

Other information may also be available (for example, added entries for joint authors, editors, illustrators, etc.). However, author, title, and subject are the three primary sources of information and the main routes for gaining access to the contents of the collection.

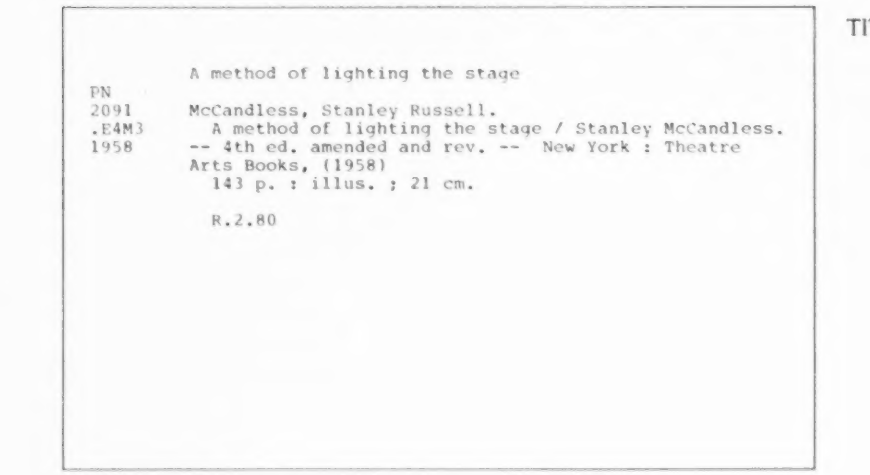
When a catalog contains author, title, and subject entries interfiled in one alphabet it is known as a dictionary catalog. A divided catalog splits up the entries. There may be three separate divided catalogs (one each for authors, titles, and subjects), or two separate divided catalogs (usually one for subjects, and another for authors and titles combined). Clarity about the type of catalog is essential in deciding on an efficient search strategy (should subjects be searched separately or during a title search?). This guarantees full identification of useful material, and prevents information being overlooked.

Cataloging is the operation of describing material so it can be distinguished from other material and located. In addition to author, title, and subjects, a catalog card will show: the place of publication, the publisher, and the date published; collation, or physical description of the item (for a book this includes size in centimeters, number of pages, and whether it has illustrations); the edition statement (John Smith, editor; third edition); notes — other bibliographic information and descriptors; tracings — subject headings and added entries; and the call number.

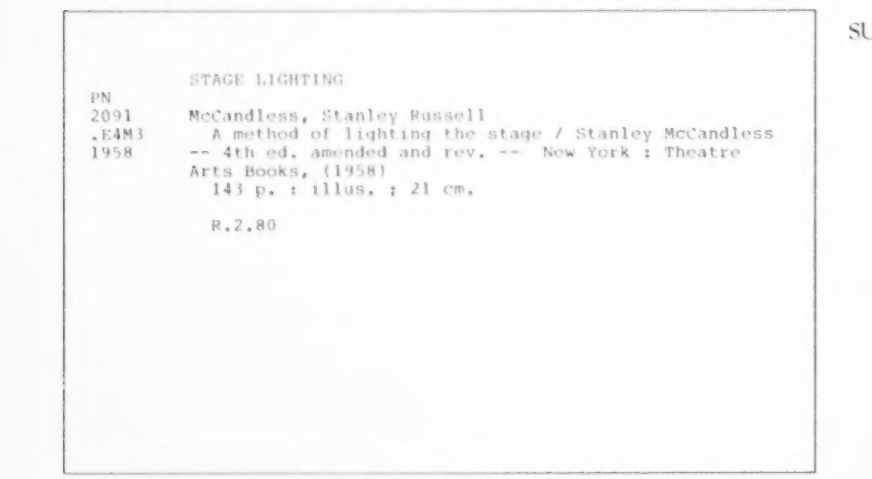
Below are samples of the author, title, and subject card for a single book. Remember that there might be additional subject cards under other subject headings.



AUTHOR


A method of lighting the stage
PN
2091
.E4M3
1958
McCandless, Stanley Russell.
A method of lighting the stage / Stanley McCandless.
-- 4th ed. amended and rev. -- New York : Theatre
Arts Books, (1958)
143 p. : illus. ; 21 cm.
R.2.80

TITLE



SUBJECT

1 – Author of book
2 – Title of book
3 – Call number
4 – Edition
5 – Description of book
6 – Date of publication
7 – Subject Headings
8 – Publisher
9 – Place of publication

FINDING IT ON THE SHELF

Call number is an old-fashioned term from the days when the public was never allowed in the "stacks." Only staff could go where books were shelved to retrieve an item requested ("called for") by a patron. The call number appears in the upper left corner of a catalog card, and on labels fixed to the materials. It is a code which can consist of one or more lines of numbers, or letters, or both. This code tells you the assigned location of the material, as well as providing other information described below.

For a search to be successful, you must use the entire call number code. For example, an "R" on the first line of the call number means the item is part of the noncirculating reference collection. Ignoring the "R" notation will lead you to the circulating collection. The item will not be on that shelf because it is being kept in another part of the building with other non-circulating reference materials.

You must follow the call number exactly, one character at a time. For example, a book label of 325 does not read three hundred twenty five. It means group three, subgroup two, and sub-subgroup five. Book 898.4516 shelves before book 898.47 because it is 4-5-1-6 not 4,516, and 5 is smaller than 7. If you find the proper location and something is not where it belongs, ask the staff for help. It might be out on loan or undergoing repairs. A "hold" could be placed on the item so you will be able to use it next when it is available.

If an item is in a special collection, that designation will be the first line of the call number, such as R for a reference book that does not circulate. The classification either follows or serves as the first line if there is no special collection designation. It is determined by and reveals the major subject of the material. Its use causes all items concentrating on the same subject to be shelved together.

There are a variety of classification systems. Most libraries in the United States use the numerical Dewey decimal classification scheme, either in its full or condensed form. The next most commonly used is the Library of Congress (LC) classification scheme, made up of letters of the alphabet. Appendix D contains a condensed listing of the main headings in both the Dewey and LC systems.

Sometimes small libraries omit classifying fiction, biographies, and periodicals. These libraries shelve them in groups alphabetically by author, biographee (the person written about), and title, respectively.

Within a given classification, most libraries use an alphanumeric "cutter" symbolizing the author. There may be an attached "work letter" for the first word of the title. This causes all items on the same subject to be arranged alphabetically by author. Then all items by the same author are arranged alphabetically by title. If there are multiple copies of the same title they are distinguished by copy numbers, dates, or other codes. This means that each item has its own unique identification. It cannot be confused with any other item, and has its own special place on the shelves.

BROWSING VERSUS CATALOG SEARCHING

Once you know the classification (for example, statistics is 310 in the Dewey scheme and HD in the Library of Congress scheme), you can go directly to the shelves and enjoy the valuable activity of browsing for useful material. However, it is critically important that you also use the catalog for serious projects, for two reasons.

The first reason has to do with the "information explosion," the rapid rate at which knowledge has been expanding. To integrate new subjects, or new concepts on existing subjects, classification systems undergo a slow but steady process of "additions and changes."

New codes and subdivisions are developed, old codes are dropped, existing codes are re-assigned to new uses, and static subjects are absorbed into broader areas. These adjustments show up in the catalog. Ignoring these changes on the assumption that the Dewey number found last year has been carved in stone for eternity, and that there is nothing elsewhere in the library building, will cost you in overlooked information.

The successful searcher understands the advantages and limitations of both browsing and searching the catalog, and uses them in combination.

Because of the high cost of recataloging and their generally low budgets, libraries have to evaluate and pace the changes they can make. The size of the collection, and the kind of use it receives (recreational, intensive research, etc.), also affect the decisions libraries make about recataloging. Sometimes one library will change quickly and totally. Another might do it selectively and slowly.

As well as making "authorized" changes in classification codes, libraries may have good reasons for doing something special. These "local decisions" result in further differences between libraries. One project may require the use of several libraries. Smart searchers never assume all libraries classify identically. You should always rely on the catalog as the guide to the collections. Again, ask the library staff for help if you are unsure about some aspect of the catalog classification.

YOU'LL FIND MORE WITH THE CATALOG

The second reason for using the catalog has to do with the nature of the classification systems and materials themselves. The classification number can show only the major subject, not the minor ones. And an item can only be shelved in one place. With multi-subject works, in which the subjects are given equal weight, catalogers may make different choices. The same book will not be found in the same place in all libraries.

These limitations do not exist in the catalog, thanks to the use of subject headings. Specific words and phrases are assigned by the cataloger to tell people about additional information available. For example, a new book on cars may have chapters on racing and upholstering. Since it is classified and shelved with the car books, rather than with the racing or upholstering books, subject cards are made for the catalog under these other subject headings. In this way, if you are a searcher focusing on racing or upholstery you can discover that there is information in the car book.

Usually all the subject headings assigned an item are listed at the bottom of the catalog card. They are given Arabic numerals and listed in order of importance. Following the subject headings are the added entries (AEs) with Roman numerals. Mostly, they record the names of other people besides the author who were important in the creation of the work, and the title.

The subject headings and added entries make up the "tracings." For each traced entry a card is made and these "made" entries are then filed in the catalog. Along with the author and title cards, they make up a catalog "set" for the item cataloged. Because each item is cataloged in these various ways, you can locate it from any of these points of entry to the catalog system.

WHERE DO SUBJECT HEADINGS COME FROM?

When catalogers assign subject headings they use standardized lists. Their "authority" may be a book called *Sears' List of Subject Headings* or it may be the Library of Congress Subject Headings. The words and phrases used are sometimes more formal than everyday language. You may have to ask for assistance from the staff, or independently check the subject heading book(s) or thesaurus often kept near the catalog. There will be an x next to a term not used in the catalog, plus a "see" reference to the subject heading that is authorized. If several terms are used for the same or related subjects in the catalog there will be a "see also" (s.a. or xx) reference. This indicates that your searching should be done under all these subject headings. It is also important for you to think of as many synonyms and related words and phrases as possible. Search these in the catalog to give yourself the best chance of identifying useful source material.

Sometimes so much material has been produced on a subject that headings must be subdivided to distinguish them and keep them logically organized. For example, English literature has period subdivisions and form subdivisions, among others: English literature — 16th Century; English literature — Dictionaries. Be sure you review all the subdivisions before giving up a search.

Subject headings in the library catalog are your most efficient route to subject information contained in many different library-owned publications housed in many different locations.

Searching a catalog can be tricky because the filing rules are complex. Even professional catalogers sometimes have problems, so do not be afraid to ask for help. Most of the time, catalog entries are filed word-by-word, as opposed to the letter-by-letter arrangement of a dictionary (New York, Newton versus Newton, Nyack). Be sure you know which way the catalog has been organized before you start a search (ask the librarian for an explanation if the system isn't clear).

STANDARD RULES OF CATALOGING

Here are some of the most important "cataloging conventions" (standard ways of organizing catalogs) that you should know:

1) Articles (a, an, the) beginning a title or heading are ignored and the next word is used in filing.

2) All M', Mc, and Mac entries are interfiled as if they were spelled Mac.

3) In a dictionary catalog, a person-as-subject is filed after a person-as-author. (A book about Shakespeare comes after a book by Shakespeare.)

4) Words or phrases may be shortened in any number of different ways, resulting in abbreviations, elisions, initials, acronyms, contractions, signs, symbols, and numbers. The general rule is to file by the speech sound of the whole, unshortened word or phrase. For example, the title Mrs. Jones would file as Mistress Jones; the title 15,385 dogs + 1 would be found in the F card catalog drawer with the fifteens, subarranged alphabetically by the words three hundred and eighty-five dogs plus one. However, when numbers are used to distinguish identical entries in a subject heading series, they file chronologically by time sequence: Olympics — 19th Century; Olympics, 1936; Olympics, 1952.

Sometimes the general filing rule has exceptions, and sometimes there will be an uncorrected filing error. Also, it takes practice to become an expert with the catalog, so:

The best course of action for you when a search involves abbreviations in any form is to work from both directions — alphabetically and chronologically.

Look for the full version as well as the shortened (truncated) one(s). For example, to be absolutely sure of capturing information about the AAA, check the first A card catalog drawer under AAA, plus the drawer with American entries for American Automobile Association.

If you think you have found a filing mistake, resist the temptation to fix it yourself. Go tell the library staff about it. They need to see the possible error because it could lead to the discovery of others which require correction, or to problem areas in which policy decisions and new rules will have to be made. A filing error will be corrected as soon as it has been confirmed and its impact on the catalog has been evaluated. If it turns out that the filing is accurate, you will be able to find out why, and become more skillful in using the catalog to locate information.

BROWSING IS ANOTHER WAY OF SEARCHING...

XII

LIBRARY REFERENCE DEPARTMENTS

Large libraries may have many employees assigned as Reference Librarians to work full-time in Reference Departments. In small libraries the Library Director may do reference work along with ordering, cataloging, and administration. When staff are available you can ask for help in answering your questions. When staff are busy or not on duty, or if there is a library but no staff, you will have to work alone.

The primary role of the reference advisor is to teach and facilitate. It can be a problem if someone starts taking over your research, or does not give you enough guidance. Explain that it is important to you to learn how to do the research yourself, and state that you would like direction. The best reference librarian achieves a balance between finding information and training users to do so with freedom and independence.

The greatest problem reference librarians find is the poorly defined or undefined reference question. (See the section on Getting Started in Your Search for Information, in this manual.) It leads in the wrong direction and wastes time. Before a correct answer can be found, or a source for the answer identified, it has to be clear what the real question is. Asking why you want the information, and what it will do for you when you get it, often helps clarify the actual need(s) and gives direction to the research. Reviewing the literature on the subject may also help. You can define a question, establish whether it is answerable in a certain situation or time frame, or discover a more useful or appropriate question option which could be chosen.

THE REFERENCE COLLECTION

The library catalog is one of the tools usually used in reference work. So is the reference collection of special materials and resources. This special collection may be as small as one shelf of books. Or it could be as large as a building filled with all kinds of print, audio, video, and other resources. The size depends upon the library's goals, budget, audience, etc.

A reference collection does not circulate. The information it contains needs to be readily available at all times. Also, it is too expensive to duplicate or replace such costly items. Sometimes replacement has become impossible, because the material is "out of print" and no longer available for sale. Reference tools and materials help you locate information within and outside of the library's general circulating collection. They make it possible for you to use the general collection creatively, and to access other collections and request interlibrary loans.

Reference works and reference collections are becoming more sophisticated every day, thanks to new technology. Computer-assisted reference is a reality in many libraries, even some of the very small ones. Whether you do manual searching or computer searching, good research methods are essential to the success of a project.

A standard procedure is to always carefully examine the introduction, preface, and other descriptive information about your search material. This is a critical step for you in evaluating quality and in protecting against losses and misunderstanding of information. More than one person has been shocked to discover, too late, that the needed information was available. They could not find it because the system for using the material was not followed correctly. The rule here is to know your sources. Only by careful analyses and comparisons will this be possible. Examine the introductory sections of a reference book to determine:

1) What's included, and what's not
2) How it is arranged and organized

3) The meaning of any special symbols or abbreviations used in the book

WHAT'S AVAILABLE?

Reference materials have been produced on every subject. The American Library Association publishes a *Guide to Reference Books*, which most libraries own and use as a buying guide. It can be a handy place for you to start an evaluation in a subject search. However, the latest (9th) edition is dated 1984, so you should also consult additional current resources. Reference librarians can usually give you the benefit of their experience with reference materials and operations, and help you decide on sources. This strategy of identification and evaluation applies equally when people are your resources in an information project.

Reference collections contain one-time publications and items in a series. Common categories of materials include:

1) encyclopedias (general and subject-specific such as the *International Encyclopedia of the Social Sciences*)
2) dictionaries (biographical, e.g., *Who's Who;* and informational, e.g., *Bartlett's Familiar Quotations*)
3) handbooks and manuals (e.g., the *Oxford Classical Dictionary;* and the *Handbook of Developmental Psychology*)
4) directories describing and locating people and organizations (telephone books are a gold mine of information)
5) indexes listing sources (they may reveal only the fact of publication, or they may also provide a location; include here *Reader's Guide* and the *New York Times Index*)
6) abstracts (indexes with descriptions and evaluations of sources)
7) atlases and gazetteers
8) language dictionaries
9) bibliographies

Every field of study has its standard reference works. In addition to consulting the card catalog, browsing through the reference shelves, and consulting guides to reference books, be sure to make use of human resources:

1) The reference librarian (who is not only familiar with the collection, but has watched the successes and failures of many users)
2) College instructors (even if you're not going to college; call up a professor in the appropriate field and ask for a two-minute summary of key reference works related to your research topic)
3) Business and professional people (for a start, ask what reference books they keep by their desks, or often consult in their work)

XIII

LOCATING GOVERNMENT DOCUMENTS

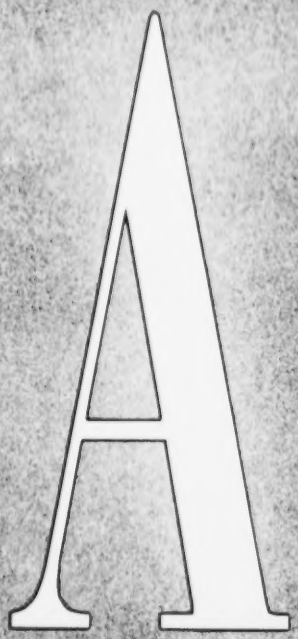
Most libraries also have some government documents. There are over 1,300 public and academic libraries in the country that maintain "depository collections" under formal agreements they have with the government to serve as "depository libraries." The Federal Depository Library Program is designed to provide the public with free access to the information generated by the Federal government. Government documents (Gov Docs) and publications of the U.S Superintendent of Documents (Su Docs) are rich in valuable information.

To locate your nearest Depository contact your nearest library or the Federal Depository Program, Office of the Public Printer, Washington, DC 20401.

As well as consulting government documents in depository libraries it is possible for you to own them. Some are free; others are not, but the prices are modest — usually just charges to cover the cost of production.

Order publication lists and items from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, (202) 275-2051.

Remember to include "Su Doc" numbers and your payment. Your librarian can help you. Municipalities, states, and international organizations also publish interesting and useful documents.



APPENDIXES

APPENDIX A

MECHANICS OF RESEARCH PAPERS FOOTNOTES AND BIBLIOGRAPHIES

The research paper is a very common type of product that you must prepare at the conclusion of a research project. In the research paper, you present your findings from your research, evaluate what you have found, and tell your conclusions. Because a research paper is based partly on information you have taken from other sources and partly on your own thinking and analysis, it must usually have a system of notes and a bibliography to let the reader know what you have used from the works of others.

NOTES: *either at the bottom of each page or at the end of the paper, identifying ideas or facts that you have taken from your research sources.*

BIBLIOGRAPHY: *an alphabetic listing at the end of your paper, usually consisting of all research sources that you have identified (cited) in your notes.*

The notes and bibliography serve to acknowledge what you have taken from your sources, tell what those sources are (so that the reader can judge how believable they are), and also make it possible for the reader to get back to your sources in case he or she wants to find out more about the topic. In choosing a format for bibliographies and footnotes it is essential to be consistent.

Types of Notes

NOTES can come either at the bottom of the page where they occur (footnotes) or they may be gathered together in a section at the end of the paper (endnotes). If you are doing a paper for a college class, check with the instructor about the preferred location for the notes. If the instructor has no objection, use endnotes — they're much easier to use, since you don't have to try to figure out the space for the notes on each page.

Numbering Notes

Whether notes appear at the foot of the page or at the end, they are numbered consecutively throughout the paper. Following a sentence containing a fact, quotation, or opinion taken from another source, the note number appears, raised above the line, like this.[1] Note number 1, whether at the foot of the page or the end of the paper, will then tell the source of the information, quotation, or idea in that sentence.

What Needs to Have a Note?

At a minimum, you need a note for:

1) A quotation, either direct or indirect. If you use someone else's words, or a close paraphrase, acknowledge the source with a note.

2) Facts and figures. If you say the conviction rate for a crime is 52%, or that Panama is about the size of Connecticut, tell where the fact came from.

3) Ideas, interpretations, or conclusions that are the distinct contribution of some other person.

It is better to have too many notes than not enough. If you not sure, put a note on it. As you become more experienced in research methods and writing research papers and reports, you will acquire more confidence about what things need to be acknowledged.

There is one other use for notes, and that is to add some explanatory material about something that appears in your paper. Years ago, it was common to use extensive notes to amplify on your text. Today, the preferred style is to try to include necessary explanations right in your text, rather than making your reader hunt for them in the notes. Therefore, you will rarely want to use notes for anything except acknowledging your sources.

The Form of Notes

Different kinds of sources require slightly different forms of notes, because of the different kinds of information that the reader needs in order to be able to find the source. In addition, there are special forms of notes and bibliographies used in some fields of study. For example, in the social sciences and natural sciences it is common to use parenthetic author/date references (Smith, 1982), rather than footnotes or endnotes. In many fields of study there are recognized "style manuals" that are used as guides to preparing papers. For example, writers in the humanities usually use the style of notes specified by the Modern Language Association. On the other hand, papers in the social sciences often follow the style of the American Psychological Association, and the natural sciences often follow the manual produced by the CBE (Council of Biology Educators). See the bibliography of research manuals, Appendix B.

In any college course, you should be sure to enquire as to the instructor's preferred form for notes and bibliography.

Note Samples

The following samples of notes are intended to give you a general idea of the type of information that needs to be included in notes for various types of sources, and one form in which it might be arranged. This is a general form that is appropriate for most college research papers. Your instructor in a given course may specify that the form of notes is to follow a particular "style."

If your instructor does not have a preferred style for notes, the form shown here will probably be acceptable.

Book with one Author:

[1]Herbert S. Gershman, *The Surrealist Revolution in France* (Ann Arbor: University of Michigan Press, 1969), p. 47.

Book with two Authors:

[2]T.K. Derry and Trevor I. Williams, *A Short History of Technology* (Oxford: Oxford University Press, 1961), p. 47.

Book with three Authors:

[3]Bernard C. Raffer, Richard Friedman, and Robert Baron, *New York in Crisis* (New York: Harper and Row, 1971), pp. 93-97.

Book with more than three Authors:

[4]Adam Rogers, Jr., et al., *Handbook of Clinical Resources* (New York: McGraw-Hill, 1975), p. 47.

Book with an editor instead of an Author:

[5]Jacquetta Hawkes, ed., *The World of the Past* (New York: Alfred A. Knopf, 1963), p. 171.

Article in a Journal:

[1]R. Brodgon, "Religious Freedom and School Holidays," *Phi Delta Kappan*, 58 (May 1977), 700.

Signed Article in a Magazine:

[2]Jack W. Germond, "Congress and Carter: Who's in Charge?" *New York Times Magazine*, January 30, 1977. p. 22.

Unsigned Article in a Magazine:

[3]"Southern Africa: Trade Feeds on Independence," *Business Week*, February 14, 1977, pp. 66-67.

Signed Encyclopedia Article:

[1]Austin Woolrych, "Olive Cromwell," *Encyclopedia Americana*, 1977, VIII, 239.

Unsigned Encyclopedia Article:

[2]"Alexander Pope," *Encyclopedia Britiannica*, 15th ed., XIV, 796.

Newspaper Article with a Byline:

[1]Gene I. Maeroff, "Circumscribing School Aid," *New York Times*, July 9, 1977, p. 1.

Newspaper Article without a Byline:

[1]"Pilot Calls Unrest Widespread in China," *New York Times*, July 9, 1977, p. 1.

Government Publication:

[1]U.S. Department of State, *The Cambodian Situation 1971-72* (Washington, D.C.: U.S. Government Printing Office, 1974), p. 227.

The Bibliography

The bibliography is the second important item that must be included in a research paper to acknowledge your sources. It may seem like a duplication of effort to have to prepare an alphabetic list of all the sources in your notes all over again in the bibliography. However, after you have done much library research, you will begin to realize just how important bibliographies are — to the next researcher who comes along.

Just as you have made use of bibliographies in books, journals, and textbooks to find the materials for your research paper, so someone else in turn may use your bibliography as a starting point for further research. By providing a good bibliography, you are "paying your dues" as a researcher, doing for someone else what other researchers have done for you. In addition, the bibliography gives your reader a quick way to check the range and type of sources you have used in your research. As you become more experienced in research, you will use this trick yourself — turning to the bibliography of a work to get an idea of the quality of the research on which it is based.

Types of Bibliographies

There are three common types of bibliographies that may be required for a research paper or report. If you are not sure what is expected, ask your instructor. When you are "on your own," the first type of bibliography (listing only works cited in the notes) is usually what is expected. However, some instructors like to see a "working bibliography," to get an idea of how widely you researched the subject. Sometimes, an "annotated bibliography" can be useful, if your purpose is to start the reader on a program of self-directed study.

The three types of bibliographies:

1) **Bibliography of works cited:** lists only the books, articles, etc., to which you have made a note in the footnotes or endnotes. In other words, this is an alphabetic list of all the works from which you took specific facts, ideas, or quotes. Usually it is entitled "Bibliography."
2) **Working bibliography:** this is a list of all the works you consulted in your research, regardless of whether or not you have made notes to them. Often entitled, "Works Consulted."
3) **Annotated bibliography:** this can included the lists of either all works consulted or (more often) the works cited. For each work, you provide a sentence or two summarizing the content of the work, or its relevance to the topic, or commenting on its usefulness, approach, authoritativeness, biases, etc. Appendix B of this manual is an example of an annotated bibliography.

Form of Bibliography Entries

As in the case of notes, different types of sources require different kinds of information in the bibliography entry. Also note that, for a given type of work, the

bibliography entry is a bit different from the note. This isn't just to confuse you; the bibliography entry is arranged so that it will readily alphabetize by author, while the note entry is in a more informal, conversational style, since the reader often reads the notes along with the text of the paper.

Bibliography Entry Samples

As in the case of notes, these samples represent a generally acceptable form of bibliographical entries for various types of sources. If you are preparing a paper for a college course, be sure to consult your instructor for the preferred form to follow. If the instructor does not have a preferred form, the ones shown here will usually be acceptable. (See Appendix B for information about guides and handbooks that cover more specialized forms of bibliographies.)

Books with one Author:

Gershman, Herbert S. *The Surrealist Revolution in France.* Ann Arbor: University of Michigan Press, 1969.

Books with two Authors:

Derry, T.K., and Williams, Trevor I. *A Short History of Technology.* Oxford: Oxford University Press, 1961.

Books with three Authors:

Raffer, Bernard C., Friedman, Richard, and Baron, Robert. *New York in Crisis.* New York: Harper and Row, 1971.

Books with more than three Authors:

Rogers, Adam ,Jr., Smith, Otis, Riff, Charles and Burns, Albert. *Handbook of Clinical Resources.* New York: McGraw-Hill, 1975.

Book with an editor instead of an Author:

Hawkes, Jacquetta, ed. *The World of Art.* New York: Alfred A. Knopf, 1963.

Article in a Journal:

Brogdan, R. "Religious Freedom and School Holidays." *Phi Delta Kappan.* 58 (May 1977); 700.

Signed Article in a Magazine:

Germond, Jack W. "Congress and Carter: Who's in Charge?" *New York Times Magazine.* January 30, 1977. p. 22.

Unsigned Article in a Magazine:

"Southern Africa: Trade Feeds on Independence." *Business Week.* February 14, 1977. pp. 66-67.

Signed Encyclopedia Article:

Woolrych, Austin. "Olive Cromwell." *Encyclopedia Americana.* 1977. Vol. VIII.

Unsigned Encyclopedia Article:

"Alexander Pope." *Encyclopedia Britiannica.* 15th ed. Vol. XIV.

Newspaper Article with a Byline:

Maeroff, Gene I. "Circumscribing School Aid." *New York Times.* July 9, 1977.

Newspaper Article without a Byline:

New York Times. "Pilot Calls Unrest Widespread in China." July 9, 1977.

Government Publication:

U.S. Department of State. *The Cambodian Situation 1971-72.* Washington, D.C.: U.S. Government Printing Office, 1974.

APPENDIX B

BIBLIOGRAPHY OF RESEARCH GUIDES AND HANDBOOKS

There are many books available on writing research papers. The books listed below have a great deal of specific information about note and bibliographic forms, library techniques and suggestions for organizing and writing term papers. Copies of some of these books are available at local libraries or at your bookstore for between $5.00 and $12.00.

Note that the following list is an example of an *annotated bibliography*, since it provides a brief description and evaluation of each item in the bibliography.

Achtert, Walter S. *The MLA style manual*, by Walter S. Achtert and Joseph Gibaldi. Modern Language Association of America. 1985.

This manual provides scholars in the humanities with a useful, authoritative guide to the mechanics of scholarly writing.

American Chemical Society. *Handbook for Authors*. Washington, D.C.: Author, 1978.

The style covered in this manual is primarily used in the hard sciences.

American Institute of Physics Style Manual. Third Edition. New York: McGraw-Hill, 1978.

Another manual for the hard sciences.

American Library Association, National Council of Teachers of English, and National Education Association. *The New Copyright Law: Questions Teachers & Librarians Ask*. Washington, D.C.: National Education Association, 1977.

This is a standard handbook for determining what is and is not permitted under the current copyright law. As we have noted, most research, and most uses of copyrighted material in research papers, does not require any special permission from the copyright holder. However, if you need to make use of copyrighted material in other ways, this booklet provides useful guidelines.

American Psychological Association. *Publication Manual of The American Psychological Association*. 3rd ed. Washington, D.C.: Author, 1983.

This is an authoritative manual of form and commonly accepted methods of citing references in papers. It is widely used in psychology and other social sciences.

Campbell, William G., et al. *Form and Style: Theses, Reports, Term Papers*. 6th ed. Boston: Houghton Mifflin, 1981.

This may be a case of overkill for many college students, but it is very complete. Includes actual typed samples of almost every conceivable sort of thing you might have to include in a research paper, including charts and tables.

The Chicago Manual of Style. 13th edition, revised and expanded. Chicago: University of Chicago Press, 1982

Much of the Turabian guide, and many of the guidelines for notes and bibliographies in other manuals, are actually based on this manual. However, the main reason you will usually consult "Chicago" is to answer questions about abbreviations, spelling, grammatical style, etc. (Is it database, data base, or data-base? Is it Ph.D., PhD, Ph.d, or Ph.d.?) This is the reference book that professional editors keep right next to the dictionary.

Council of Biology Educators. *Council of Biology Educators Style Manual*. Fourth Edition. 1978.

The standard style manual for the natural sciences.

Gibaldi, Joseph, and Achtert, Walter S. *The MLA Handbook for Writers of Research Papers, Theses and Dissertations*. New York: Modern Language Association of America, 1984.

A comprehensive, detailed guide to forms and formats for theses, term papers, footnotes, and bibliographies. This is an updated version of *The MLA Style Sheet* widely used by colleges and universities in the 1970s. "MLA style" is commonly used in the humanities and foreign languages fields.

Hodges, John C., and Whitten, Mary E. *Harbrace College Handbook*. 9th ed. New York: Harcourt Brace Jovanovich, 1984.

A standard college writing text, containing a fairly extensive chapter on research papers, chapters on organization, spelling, punctuation, grammar, etc. Most other "handbooks" used in English composition courses will also include a chapter on term papers.

Hubbuch, Susan M. *Writing Research Papers Across the Curriculum*. New York: Holt, Rinehart and Winston, 1985.

In addition to providing much general information on research and term paper writing, this manual provides examples of notes and bibliographies prepared in accordance with several different styles (APA, MLA, etc.).

Lester, James D. *Writing Research Papers: A Complete Guide*. 4th ed. Glenview, Illinois: Scott Foresman, 1983.

A useful and unpretentious book that provides a good treatment of the process of conducting research: choosing and narrowing topics, taking notes, using a library, etc. Also includes a listing of general reference books and journals by subject areas.

Markman, Roberta H., and Waddell, Marie L. *Ten Steps in Writing the Research Paper*. revised ed. Woodbury, New York: Barron's Educational Series, 1982.

As the title suggests, this is a methodical, step-by-step approach. It may, in fact, make the process of writing a research paper seem much more cut-and-dried than it really is.

Strunk, William Jr., and E. B. White. *The Elements of Style*. New York: MacMillan Publishing Co., Inc., 1979.

This book contains concise descriptions of the rules and principles of English rhetoric.

Turabian, Kate L. *Student's Guide for Writing College Papers*. revised 3rd ed. Chicago: University of Chicago Press, 1977.

This standard guide lists almost every conceivable type of note and bibliography entry and provides several extensive bibliographies of reference books and other reference sources.

APPENDIX C

GLOSSARY OF TERMS RELATED TO LIBRARIES AND RESEARCH

Abstract(s) ..... A brief summary of a book or article. Also, a bibliography or index that provides summary descriptions of the sources listed. It may also give evaluations of the material.

Acquisitions ..... Library department that handles ordering and receiving of material.

Academic library ..... Library that is part of a college, university, or graduate school.

Added entries ..... Notations for titles and for other people besides the creator who are important to the work. Listed with Roman numerals on the bottom of the catalog card.

Annotation ..... A note or comment about a text, usually critical or explanatory.

Bibliographic methods ..... Strategies for locating information and conducting research.

Bibliography ..... A list of sources used for a report, research paper, etc. Also, a reference tool.

Browse ..... Going directly to the library shelves to look for and review information. Browsing should be used in combination with a search of the catalog to be sure you find everything on a subject.

Call number ..... Group of numbers and letters appearing in the upper left corner of a catalog card, and on the library item on the shelf. It indicates the classification of the material and provides a means of locating it on the library shelves.

Card set ..... The three cards (author, title and subject) by which books are catalogued by most libraries. May also include cards that are filed by second authors, additional subjects or subtitles.

Catalog ..... Finding tool used by the public to learn what a library owns and where it is physically housed. It may be a card file, it may be in book form, or it may be on microfilm, microfiche, or computer. There may be a main catalog for the reference and general collections, plus special catalogs or lists for special groups of items. See also dictionary catalog and divided catalog.

Cataloging ..... The operation of describing material so it can be distinguished from other material and physically located in a library.

Citation ..... A statement giving the origin of quotes, ideas, or information used. Also known as a reference or a source. A citation usually takes the form of a footnote or endnote in a research paper.

Classification ..... System used by libraries to arrange materials according to their subject content. The most commonly used classification systems in U.S. libraries are the Dewey Decimal and Library of Congress systems.

Collation ..... The physical description of a work. For a book it shows the number of pages, the size in centimeters, if there are illustrations, and what kind of illustrations there are.

Computer-assisted reference ..... Reference work that also uses computer systems for locating information. There may be a fee involved.

Copyright ..... Law governing the use of created works by creators and the general public.

Copyright notice ..... A copyright symbol with a date indicating a work is protected under copyright laws. Example: Copyright 1984.

Cross reference ..... A referral from one subject or name to another. A "see" reference will refer you from a term that is not used in a particular catalog to one that is used. Example: "U.S.S.R. see Russia." A "see also" reference will refer you to additional terms, e.g. "petrified forests see also trees, fossils."

Cumulative index ..... An index that combines successively the entries of earlier issues or volumes in a single index.

Cutter ..... Code which symbolizes the name of the author, following the classification in the call number. When used in library cataloging, works on the same subject will shelve alphabetically by author. May be followed by a work letter.

Database ..... An organized collection of information, used for research. It may be in any form, but this term is usually used for materials that can be searched with a computer.

Depositories ..... local libraries which contract with the U.S. government to house and make available to the public a variety of government publications.

Dewey Decimal ..... One of two common numerical classification systems for organizing library collections.

Dictionary catalog ..... A catalog containing author, title, and subject entries interfiled in one alphabet. Also see divided catalog.

Directories ..... Sources, usually in book form, describing and locating people and organizations.

Divided catalog ..... A library catalog that is not filed as one alphabet. Entries are split into two catalogs; usually author and title cards are in one catalog, subject cards in another; or there may be three catalogs, one for each type of entry.

Documentation ..... The systematic process of collecting, classifying, recording, storing, and disseminating specialized information. Also, the process of providing footnotes, bibliographic citations, or appendices referring to or containing documentary evidence in verification of facts or in support of a theory. The notes and bibliography are the documentation of a research paper.

Entry ..... An item in a list. Also, in library cataloging, the specific points of access for locating information, including author, title, subjects, and added entries.

Educational Resource Information Center (ERIC) ..... System of nationwide computerized access to information on education. Includes both published and unpublished works.

Errata ..... A notice of an error, with the correction. Usually inserted as a slip of paper or an extra page bound into a book. Singular is erratum.

Facsimile Machine ..... A telecopier also referred to as FAX. Transmits copies of material from one physical location to another via telecommunication lines.

Fair Use ..... Making limited use of copyrighted material so that it is not necessary to obtain special permission from the copyright holder.

Gov. Docs ..... (See Government Documents)

Government documents ..... Material produced by agencies of the U.S. government and state governments, as well as foreign and international political bodies. Federal (U.S.) documents may be used in depository libraries, or ordered from the producing agencies or the Superintendent of Documents.

Handbooks ..... Ready reference sources for given fields of knowledge.

Holdings ..... The collection of books, periodicals, etc. in a library.

Hypothesis ..... An idea to explain a problem or phenomenon, which must be proven before it can be considered a true fact.

Index ..... A listing; usually arranged alphabetically; gives reference to the contents of a book, journal or collection. A periodical index (e.g., Social Science Index) indexes the contents of journals, providing subject access to the journal contents.

Interlibrary loan ..... A procedure for borrowing material owned by another library, so a searcher can get information that is not available in a local library.

Journal ..... A periodical; a magazine.

Keyword ..... A significant word, as from a title (of a book or article), that can be used as an index term in a subject index.

Library of Congress ..... A subject heading authority for library cataloging. Also, a classification system using letters of the alphabet, for organizing library collections. U.S. libraries generally use either the Library of Congress or the Dewey Decimal system for classifying their materials.

LC ..... (See Library of Congress)

"Made" card/"made" entry ..... Catalog cards that are additional to the main card set. These cards may be catalogued by names of second and third authors, additional subjects or substitutes. They are cross referenced from the main card set. Also see card set.

Main entry ..... In a card catalog or index, the entry under which full bibliographic information is given, usually the author entry.

Microform ..... For purposes of storage and convenience information is put on rolls of film (microfilm) or flat transparencies (microfiche) used with readers.

Monograph ..... Usually, a scholarly book covering a single subject. Sometimes, monographs are issued as a series covering a group of related subjects.

Network ..... The act of networking or exchanging information or services; a group that networks by providing information, services, and support to its members.

OCLC (On-line Computer Library Center) ..... A bibliographic database. This computerized system is used by libraries to locate and order materials through interlibrary loan.

On-line ..... an interactive computer system. On-line searching allows a search to be processed while the searcher is connected to the computer.

Out-of-print ..... Publication has ceased, and purchase from the publisher is not possible.

Periodical ..... A serial appearing two or more times a year, usually with a progressive numbering system for the individual issues; assumed to continue indefinitely.

Plagiarism ..... One person's use of information created by another in a way that leads others to conclude the user is the creator. The most common problem is failing to provide a footnote indicating that you have used material from another source.

Preface ..... Information about the book or other items to be used, appearing ahead of the subject content. It describes how the material is organized, and it gives special instructions on how to use the material to get information.

Public Domain ..... A term referring to created works not covered by copyright. Copying is not limited.

Reasonable use ..... See Fair Use.

Reference collection ..... Group of special resources used in information searching in libraries. These materials usually do not circulate (may not be borrowed).

Reference librarian ..... Library staff member specializing in reference work.

Reference services ..... Assistance given by libraries to users and researchers.

Register of Copyrights ..... The U.S. government office in charge of administering the copyright law.

Research collection ..... A library collection that has become so strong in a particular subject area that it is considered a key resource for doing research.

Sears ..... A subject heading authority for library cataloging. More general than Library of Congress.

"See also" ..... Recommendation to also search under similar and related terms. Often shown in a subject authority as *s.a.* or *xx* plus specific words and phrases. Example: "Petrified wood, see also fossils."

"See" reference ..... Instructions that a different term must be used in searching. Often shown in a subject authority as *x* plus specific words and phrases. Example: "USSR, see Russia."

Serial ..... A publication issued in successive parts and intended to be continued indefinitely. Serials include periodicals, newspapers, annual reports, society proceedings, etc.

Serial list or record ..... Often a single volume, this gives, in alphabetical order, the titles and volumes of periodicals available in a library. Libraries that list their serials this way sometimes do not list them in the card catalog.

Shelf list ..... A card catalog arranged in call number order that mirrors the arrangement of books on the shelf.

Single use copying ..... One copy, one time, by one person. This is permitted under the copyright law.

Software ..... Information packages and materials such as records, tapes, databases, etc. which require the use of machines or other equipment and hardware.

Special interest collections ..... Groups of materials concentrating on a selected topic.

Su Docs ..... See Superintendent of Documents.

Subject headings ..... A word, or group of words, under which all material dealing with a given subject is entered in an index, catalog or bibliography. Subject headings are usually taken from an authoritative source, such as the Library of Congress or Sears classification.

Subject headings ..... Listed with Arabic numerals on the bottom of the catalog.

Superintendent of Documents ..... Publishes and distributes U.S. government documents. Each carries a SU Doc number, needed for ordering and locating. Contact as follows: Superintendent of Documents, Government Printing Office, Washington, DC 20402, (202) 275-2051.

Thesaurus ..... 1) In a library, a subject heading list used by that particular library for its card catalog. 2) A reference book that arranges words according to their meaning, used by writers as an aid in finding the right word to express an exact meaning.

Tracings ..... List on the bottom of the catalog card, showing subject headings and added entries. They are made up on separate cards for the catalog to describe and locate a book, etc.

Truncated ..... Shortened form; abbreviation.

Union list ..... A catalog listing the holdings of a group of libraries, generally established by a cooperative effort.

Vertical file ..... Pamphlets, clippings and other miscellaneous material, arranged in folders alphabetically by subject and kept in a file. No further records are kept, so you must usually search directly in these files, not in the card catalog.

Work letter ..... Code added to Cutter to symbolize the title of the work in the call number. When used in library cataloging, it causes works by the same author to shelve together alphabetically by title.

APPENDIX D

LIBRARY CLASSIFICATION SCHEMES

The two most common schemes used for classifying materials in U.S. libraries are the Dewey Decimal and Library of Congress systems. The outlines of these schemes presented here contain only the main headings. Under each main heading (each single letter in the Library of Congress system and each whole hundred in the Dewey Decimal system), there are also many subdivisions.

For example, in the Dewey system, the 300 (social sciences) division contains such subdivisions as:

310 Statistics
320 Political Science
330 Economics
    331 Labor
        331.4 Women in Business
    332 Money and Banking
        332.41 Inflation

The Library of Congress system goes to a combination of two letters within divisions, and then numbers for additional subdivisions, and even decimals for finer distinctions:

HA Statistics
HB Economics
    HB 3730 Business Conditions and Forecasting

Outline of the Dewey Decimal Classification

(main headings only)

000 General Works (works covering many topics, such as general encyclopedias)
100 Philosophy
200 Religion
300 Social Sciences
400 Languages
500 Pure Sciences
600 Applied Science
700 Fine Arts
800 Literature
900 History

Outline of Library of Congress System

(main headings only)

A	General Works
B	Philosophy, Psychology, Religion
C	Auxiliary Sciences of History
D	History: General and Old World
E-F	History: America
G	Geography, Anthropology, Recreation
H	Social Sciences
K	Law
L	Education
M	Music
N	Fine Arts
P	Language and Literature
Q	Science
R	Medicine
S	Agriculture
T	Technology
U	Military Science
V	Naval Science
WXY	(Reserved for future expansion)
Z	Bibliography, Library Science

Since library classifications were drawn up many years ago, some headings are not where you would expect them to be. For example, in both of these systems, psychology is grouped with philosophy, not with the social sciences. Most libraries will have a sheet or booklet posted by the card catalog showing the main and subheadings used in that library.

These classification outlines may be useful in guiding your browsing in a library. However, you should usually do most of your searching in the card catalog, so that you do not miss items that may not appear under the heading you thought they would.

APPENDIX E

BLOOM'S TAXONOMY OF COGNITIVE OBJECTIVES

(condensed)

Knowledge — Involves bringing to mind the appropriate facts and combination of facts. Emphasis is on recall.

define	name	record	repeat
list	recall	relate	underline
indicate	label	identify	select

Comprehension — Lowest level of understanding. Includes understanding of basic concepts, principles, theories, etc. Emphasis is on grasp of meaning, intent, or relationship.

describe	express	recognize	review
discuss	identify	report	tell
explain	locate	restate	translate
summarize	suggest	paraphrase	classify

Application — The selection and use of general rules, procedures, and methods for specific situations. Involves the process of manipulating information to obtain a particular result.

apply	dramatize	operate	organize
employ	illustrate	practice	give examples
demonstrate	interpret	schedule	predict
investigate	translate	compute	construct

Analysis — The breaking down of an organized structure to identify the elements, their relationships, and the organizational principles involved. Includes the ability to reorganize the structure.

analyze	contrast	differentiate	inventory
appraise	criticize	distinguish	question
calculate	debate	examine	relate
categorize	determine	experiment	solve

Synthesis — Putting together elements and parts to form a new whole. This involves working with pieces, principles, rules, etc. and organizing them into a new structure not clearly there before.

arrange	compose	design	plan
assemble	construct	formulate	prepare
collect	create	manage	propose
produce	perform	organize	set-up

Evaluation — Judgments about the value of data, materials, results or methods. Includes quantitative and qualitative judgments in relation to both obvious and obscure criteria.

appraise	compare	grade	revise
assess	estimate	judge	score
choose	evaluate	measure	select
contrast	decide	rate	value

Community College of Vermont, Instructor Handbook, Second Edition, m.p.: Author, 1984, p. B-3, Adapted by G. Richard Eisele from Benjamin S. Bloom (ed.), *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*, New York and London: Longman, 1956, pp. 201-207.

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